

**ALLOIOCOCCUS OTITIDIS OPEN READING FRAMES (ORFs) ENCODING
POLYPEPTIDE ANTIGENS, IMMUNOGENIC COMPOSITIONS AND USES THEREOF**

FIELD OF THE INVENTION

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The present invention relates to the genomic sequence of *Alloiococcus otitidis* and polynucleotide sequences encoding polypeptides of the Gram-positive bacterium, *Alloiococcus otitidis*. The invention also relates to polynucleotides and polynucleotides encoding polypeptides, preferably antigenic polypeptides, encoded by the *Alloiococcus*

10 *otitidis* open reading frames and the uses thereof.

BACKGROUND OF THE INVENTION

Otitis media, an inflammation of the middle ear, is the most frequent cause of visits to pediatricians' offices in the United States (Schappert, 1991). Approximately 80% of all children experience at least one episode of Otitis media by the age of three (Klein, 1994). There are three main types of otitis media: Acute otitis media (AOM), otorrhea, and otitis media with effusion (OME). *Alloiococcus otitidis* has only been associated with otitis media with effusion (OME), but this may be due to the difficulty of its detection by standard bacterial culturing methods. Its detection in the effusions is likely due to the fact that the effusions are normally sterile and few or no competing bacterial species are isolated from them. Without the interference of a faster growing nasopharyngeal species, the culture plates are incubated for the longer duration needed to detect *Alloiococcus*

25 Three other bacterial species are commonly isolated from middle ear effusions. These are nontypable *Haemophilus influenzae*, *Moraxella catarrhalis*, and *Streptococcus pneumoniae*. One or more of these species have been found in one study to be associated with about 77% of all cases of OME using a PCR detection method (Post, 2000). This study did not include assaying for *Alloiococcus otitidis*, so a portion of the unaccounted cases may be due to this organism.

30 The bacterium *Alloiococcus otitidis* was first isolated from the middle ear fluids of 10 children in the Buffalo, NY area with persistent OME and characterized as a large catalase negative, Gram-positive cocci that tend to occur in clumps, often in tetrads. It is slow growing and requires 2 to 5 days at 37°C before colonies are seen on sheep blood agar plates (Table 1). The bacterium was named *Alloiococcus otitis* by Aguirre and

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Collins (1992), who showed that it was different from other known Gram-positive species based on its 16S rRNA sequence. Recently the bacterium's name has been changed from *Alloiococcus otitis* to *Alloiococcus otitidis* (Hendolin, et al. *Pediatr. Infect. Dis. J.* 18:860 (1999), Hendolin et al. *J. Clin. Microbiol.* 38:125 (2000)).

Several studies of the epidemiology *Alloiococcus otitidis* indicate it is associated with otitis media with effusion. These are summarized in Table 1. These studies have been carried out using both culture and PCR techniques. The number of cases detected by culture, as might be expected from the fastidious growth requirements of the bacterium, was less than the number detected by PCR. Assuming that the bacterium is detected more accurately by the PCR method, the bacterium is detected in between 10 and 50% of patients with OME. This frequency suggests that this organism represents a significant public health problem. Consequently, there is a need for immunogenic compositions to prevent symptoms caused by *Alloiococcus otitidis* infections. There is also a need for compositions for diagnosing *Alloiococcus otitidis* infections.

TABLE 1: SUMMARY OF STUDIES INDICATING AN ASSOCIATION OF *ALLOIOCOCCUS OTITIDIS* WITH OTITIS MEDIA WITH EFFUSION (OME).

| % Detected | N ^a | Method | Reference |
|---------------|----------------|---------|--|
| 8 | 200 | Culture | Faden & Dryja, <i>J. Clin. Microbiol.</i> 27:2488 (1989) |
| 3 | 100 | Culture | Sih et al., <i>ICAAC</i> (1992) |
| 20 | 25 | PCR | Hendolin et al., <i>J. Clin. Microbiol.</i> 35:2854 (1997) |
| 50 | 12 | PCR | Beswick, et al. <i>Lancet</i> 345:386 (1999) |
| 42 | 67 | PCR | Hendolin, et al. <i>Pediatr. Infect. Dis. J.</i> 18:860 (1999) |
| 10 | 49 | PCR | Hendolin et al. <i>J. Clin. Microbiol.</i> 38:125 (2000) |

^a Number of persons in study.

SUMMARY OF THE INVENTION

The present invention broadly relates to *Alloiococcus otitidis* genomic sequence. Particularly, the invention relates to newly identified polynucleotide open reading frames (ORFs) comprised within the genomic nucleotide sequence of *Alloiococcus otitidis*, and to polypeptides encoded by the ORFs. More particularly, the ORFs encode polypeptides that are surface localized, secreted, or exposed on *Alloiococcus otitidis*.

Thus, in certain aspects, the invention relates to *Alloiococcus otitidis* ORFs that

encode *Alloiococcus otitidis* polypeptides. In preferred embodiments, these *Alloiococcus otitidis* polypeptides are antigenic polypeptides. As defined hereinafter, an *Alloiococcus otitidis* antigenic polypeptide, antigen or immunogen, is an *Alloiococcus otitidis* polypeptide that is immunoreactive with an antibody or an *Alloiococcus otitidis* polypeptide that elicits an immune response. In other embodiments, the invention relates to the polynucleotides encoding these antigenic polypeptides. In other aspects, the invention relates to vectors comprising *Alloiococcus otitidis* ORFs and cells or animals transformed with these vectors. The invention relates also to methods of detecting these nucleic acids or polypeptides and kits for diagnosing *Alloiococcus otitidis* infection. The invention further relates to pharmaceutical compositions, in particular immunogenic compositions, for the prevention and/or treatment of bacterial infection, in particular *Alloiococcus otitidis*.

In a preferred embodiment, the immunogenic compositions are used for the treatment or prevention of non-systemic diseases, particularly of the Otitis media, which are induced or worsened by *Alloiococcus otitidis*.

In particular embodiments, the invention relates to an isolated polynucleotide of an *Alloiococcus otitidis* genomic sequence, wherein the polynucleotide comprises a nucleotide sequence having at least about 70% identity to a nucleotide sequence chosen from one of odd numbered sequences set out in SEQ ID NO: 1 through 6649, a degenerate variant thereof, or a fragment thereof. As defined hereinafter, a "degenerate variant" is defined as a polynucleotide that differs from the nucleotide sequence shown in SEQ ID NO:1 through SEQ ID NO:6649 (and fragments thereof) due to degeneracy of the genetic code, but still encodes the same *Alloiococcus otitidis* polypeptide (*i.e.*, SEQ ID NO:2 through SEQ ID NO:6650) as that encoded by the nucleotide sequence shown in SEQ ID NO:1 through SEQ ID NO:6649.

In other embodiments, the polynucleotide is a complement to a nucleotide sequence chosen from one of the odd numbered sequences set out in SEQ ID NO: 1 through SEQ ID NO: 6649, a degenerate variant thereof, or a fragment thereof. In yet other embodiments, the polynucleotide is selected from the group consisting of genomic DNA, cDNA and RNA or may further comprise heterologous nucleotides.

In another embodiment, the invention comprises an isolated polynucleotide that hybridizes to a nucleotide sequence chosen from one of odd numbered sequences set out in SEQ ID NO: 1 through SEQ ID NO: 6649, a complement hereof, a degenerate

variant thereof, or a fragment thereof, under high stringency hybridization conditions. In yet other embodiments, the polynucleotide hybridizes under intermediate stringency hybridization conditions.

In a preferred embodiment, an isolated polynucleotide of a an *Alloicoccus*
5 *otitidis* genomic sequence comprises a nucleotide sequence chosen from one of odd numbered sequences set out in SEQ ID NO: 1 through SEQ ID NO: 6649, a fragment thereof, or a degenerate variant thereof, and encodes a polypeptide, a biological equivalent thereof, or a fragment thereof, selected from the group consisting of (a) an *Alloicoccus otitidis* polypeptide predicted by SignalP algorithm analysis as having met
10 all four criteria set out in the SignalP algorithm for a polypeptide having a signal peptide and a subset of these are predicted by HMM SignalP algorithm analysis as having a signal peptide; (b) an *Alloicoccus otitidis* polypeptide predicted by SignalP algorithm analysis as having met three of the four criteria set out in the SignalP algorithm for a polypeptide having a signal peptide and a subset of these predicted by HMM SignalP
15 algorithm analysis as having a signal peptide; (c) an *Alloicoccus otitidis* polypeptide predicted by HMM SignalP algorithm analysis as having a signal peptide; (d) an *Alloicoccus otitidis* polypeptide predicted by HMM SignalP algorithm analysis as being a non-secretory protein; (e) an *Alloicoccus otitidis* polypeptide identified by Pfam analysis; (f) an *Alloicoccus otitidis* polypeptide identified by BlastP analysis as being secreted,
20 surface exposed, vaccine candidate; (g) an *Alloicoccus otitidis* polypeptide identified using proteomics methodology as sharing homology with putative surface exposed proteins of *Streptococcus pneumoniae*; (h) an *Alloicoccus otitidis* polypeptide having a LPXTG motif, wherein the polypeptide is covalently attached to the peptidoglycan layer; (i) an *Alloicoccus otitidis* lipoprotein; (j) an *Alloicoccus otitidis* polypeptide non-
25 covalently associated with the peptidoglycan layer; (k) an *Alloicoccus otitidis* polypeptide having an RGD motif wherein X is not a proline residue; (l) an *Alloicoccus otitidis* polypeptide predicted by BlastP as being involved in capsule biosynthesis and transport; (m) an *Alloicoccus otitidis* polypeptide identified by BlastP as being localized within the capsule loci of the *Alloicoccus otitidis* genome; (n) an *Alloicoccus otitidis*
30 polypeptide predicted by BlastP as being associated with sporulation; (o) an *Alloicoccus otitidis* polypeptide encoded by unique ORFs identified by BlastP analysis as having a BlastP 'E Value' of $> e^{-10}$; (p) an *Alloicoccus otitidis* polypeptide identified by Glimmer™ ORF finder program; (q) an *Alloicoccus otitidis* polypeptide identified by

GeneMark™ ORF finder program; (r) an *Alloiococcus otitidis* polypeptide identified by Applicants' assignee's ORF finder program that searches for an ATG, GTG or TTG Start codon between a Stop-Stop ORF; and (s) an *Alloiococcus otitidis* polypeptide identified by Applicants' assignee's ORF finder program that searches for a transmembrane domain between two Stop codons and a Start codon immediately upstream of this transmembrane region.

In one aspect of this embodiment, the polynucleotide is a complement to a nucleotide sequence selected from one of odd numbered sequences set out in SEQ ID NO: 1 and SEQ ID NO: 6649, a degenerate variant thereof, or a fragment thereof. In yet other aspects of this embodiment, the polynucleotide is selected from the group consisting of DNA, chromosomal DNA, cDNA and RNA or may further comprise heterologous nucleotides. In another aspect of the invention, the polynucleotide encodes a fusion polypeptide.

In a preferred embodiment, the invention comprises an isolated polynucleotide of the *Alloiococcus otitidis* genomic sequence encoding a polypeptide, which is predicted by SignalP algorithm analysis as having met all four criteria set out in the SignalP algorithm for a polypeptide having a signal peptide, and the polynucleotide is selected from one of Seq. ID No. 89, Seq. ID No. 127, Seq. ID No. 131, Seq. ID No. 133, Seq. ID No. 161, Seq. ID No. 163, Seq. ID No. 213, Seq. ID No. 215, Seq. ID No. 225, Seq. ID No. 249, Seq. ID No. 251, Seq. ID No. 287, Seq. ID No. 289, Seq. ID No. 369, Seq. ID No. 371, Seq. ID No. 375, Seq. ID No. 377, Seq. ID No. 497, Seq. ID No. 503, Seq. ID No. 505, Seq. ID No. 527, Seq. ID No. 549, Seq. ID No. 575, Seq. ID No. 617, Seq. ID No. 657, Seq. ID No. 659, Seq. ID No. 661, Seq. ID No. 675, Seq. ID No. 715, Seq. ID No. 717, Seq. ID No. 745, Seq. ID No. 747, Seq. ID No. 755, Seq. ID No. 757, Seq. ID No. 759, Seq. ID No. 761, Seq. ID No. 773, Seq. ID No. 807, Seq. ID No. 967, Seq. ID No. 973, Seq. ID No. 975, Seq. ID No. 1013, Seq. ID No. 1025, Seq. ID No. 1027, Seq. ID No. 1039, Seq. ID No. 1075, Seq. ID No. 1089, Seq. ID No. 1195, Seq. ID No. 1197, Seq. ID No. 1207, Seq. ID No. 1239, Seq. ID No. 1243, Seq. ID No. 1245, Seq. ID No. 1269, Seq. ID No. 1315, Seq. ID No. 1317, Seq. ID No. 1331, Seq. ID No. 1365, Seq. ID No. 1367, Seq. ID No. 1369, Seq. ID No. 1445, Seq. ID No. 1447, Seq. ID No. 1513, Seq. ID No. 1517, Seq. ID No. 1545, Seq. ID No. 1549, Seq. ID No. 1561, Seq. ID No. 1569, Seq. ID No. 1571, Seq. ID No. 1585, Seq. ID No. 1643, Seq. ID No. 1653, Seq. ID No. 1661, Seq. ID No. 1663, Seq. ID No. 1707, Seq. ID No. 1733, Seq. ID No. 1737,

Seq. ID No. 1755, Seq. ID No. 1765, Seq. ID No. 1767, Seq. ID No. 1775, Seq. ID No. 1791, Seq. ID No. 1805, Seq. ID No. 1875, Seq. ID No. 1969, Seq. ID No. 1981, Seq. ID No. 2053, Seq. ID No. 2055, Seq. ID No. 2087, Seq. ID No. 2089, Seq. ID No. 2091, Seq. ID No. 2105, Seq. ID No. 2115, Seq. ID No. 2149, Seq. ID No. 2151, Seq. ID No. 2159, Seq. ID No. 2177, Seq. ID No. 2277, Seq. ID No. 2293, Seq. ID No. 2321, Seq. ID No. 2347, Seq. ID No. 2351, Seq. ID No. 2353, Seq. ID No. 2365, Seq. ID No. 2395, Seq. ID No. 2421, Seq. ID No. 2425, Seq. ID No. 2427, Seq. ID No. 2429, Seq. ID No. 2449, Seq. ID No. 2459, Seq. ID No. 2525, Seq. ID No. 2531, Seq. ID No. 2607, Seq. ID No. 2651, Seq. ID No. 2679, Seq. ID No. 2693, Seq. ID No. 2699, Seq. ID No. 2703, Seq. ID No. 2753, Seq. ID No. 2785, Seq. ID No. 2813, Seq. ID No. 2829, Seq. ID No. 2835, Seq. ID No. 2841, Seq. ID No. 2879, Seq. ID No. 2881, Seq. ID No. 2935, Seq. ID No. 2937, Seq. ID No. 2949, Seq. ID No. 2965, Seq. ID No. 2967, Seq. ID No. 2973, Seq. ID No. 3007, Seq. ID No. 3009, Seq. ID No. 3011, Seq. ID No. 3029, Seq. ID No. 3031, Seq. ID No. 3109, Seq. ID No. 3111, Seq. ID No. 3219, Seq. ID No. 3223, Seq. ID No. 3273, Seq. ID No. 3297, Seq. ID No. 3331, Seq. ID No. 3335, Seq. ID No. 3341, Seq. ID No. 3349, Seq. ID No. 3353, Seq. ID No. 3355, Seq. ID No. 3377, Seq. ID No. 3391, Seq. ID No. 3425, Seq. ID No. 3449, Seq. ID No. 3493, Seq. ID No. 3573, Seq. ID No. 3611, Seq. ID No. 3619, Seq. ID No. 3689, Seq. ID No. 3753, Seq. ID No. 3755, Seq. ID No. 3765, Seq. ID No. 3781, Seq. ID No. 3783, Seq. ID No. 3851, Seq. ID No. 3903, Seq. ID No. 4005, Seq. ID No. 4007, Seq. ID No. 4027, Seq. ID No. 4073, Seq. ID No. 4137, Seq. ID No. 4141, Seq. ID No. 4143, Seq. ID No. 4145, Seq. ID No. 4225, Seq. ID No. 4343, Seq. ID No. 4385, Seq. ID No. 4399, Seq. ID No. 4469, Seq. ID No. 4483, Seq. ID No. 4493, Seq. ID No. 4495, Seq. ID No. 4533, Seq. ID No. 4699, Seq. ID No. 4709, Seq. ID No. 4711, Seq. ID No. 4735, Seq. ID No. 4827, Seq. ID No. 4871, Seq. ID No. 4873, Seq. ID No. 4879, Seq. ID No. 4921, Seq. ID No. 4981, Seq. ID No. 5115, Seq. ID No. 5267, Seq. ID No. 5341, Seq. ID No. 5387, Seq. ID No. 5465, Seq. ID No. 5467, Seq. ID No. 5479, Seq. ID No. 5497, Seq. ID No. 5513, Seq. ID No. 5543, Seq. ID No. 5545, Seq. ID No. 5567, Seq. ID No. 5587, Seq. ID No. 5589, Seq. ID No. 5591, Seq. ID No. 5611, Seq. ID No. 5621, Seq. ID No. 5641, Seq. ID No. 5681, Seq. ID No. 5719, Seq. ID No. 5771, Seq. ID No. 5783, Seq. ID No. 5895, Seq. ID No. 5899, Seq. ID No. 5901, Seq. ID No. 5927, Seq. ID No. 5929, Seq. ID No. 5939, Seq. ID No. 5987, Seq. ID No. 6013, Seq. ID No. 6087, Seq. ID No. 6089, Seq. ID No. 6091, Seq. ID No. 6093, Seq. ID No. 6095, Seq. ID No. 6103, Seq. ID No. 6169, Seq. ID No. 6185,

Seq. ID No. 6187, Seq. ID No. 6195, Seq. ID No. 6197, Seq. ID No. 6203, Seq. ID No. 6205, Seq. ID No. 6221, Seq. ID No. 6223, Seq. ID No. 6229, Seq. ID No. 6291, Seq. ID No. 6415, Seq. ID No. 6417, Seq. ID No. 6473, Seq. ID No. 6507, Seq. ID No. 6543, Seq. ID No. 6595, Seq. ID No. 6597, Seq. ID No. 6599, Seq. ID No. 6601, and Seq. ID No. 6603.

In yet another preferred embodiment, the invention comprises an isolated polynucleotide of the *Alloiococcus otitidis* genomic sequence encoding a polypeptide which is predicted by SignalP algorithm analysis as having met three of the four criteria set out in the SignalP algorithm for a polypeptide having a signal peptide and which is predicted by HMM Signal P algorithm analysis as having a signal peptide, and the polynucleotide is selected from one of Seq. ID No. 7, Seq. ID No. 11, Seq. ID No. 23, Seq. ID No. 45, Seq. ID No. 47, Seq. ID No. 53, Seq. ID No. 59, Seq. ID No. 65, Seq. ID No. 67, Seq. ID No. 87, Seq. ID No. 91, Seq. ID No. 139, Seq. ID No. 151, Seq. ID No. 159, Seq. ID No. 165, Seq. ID No. 169, Seq. ID No. 185, Seq. ID No. 211, Seq. ID No. 217, Seq. ID No. 235, Seq. ID No. 237, Seq. ID No. 239, Seq. ID No. 271, Seq. ID No. 285, Seq. ID No. 291, Seq. ID No. 327, Seq. ID No. 349, Seq. ID No. 385, Seq. ID No. 387, Seq. ID No. 407, Seq. ID No. 427, Seq. ID No. 431, Seq. ID No. 455, Seq. ID No. 457, Seq. ID No. 495, Seq. ID No. 499, Seq. ID No. 511, Seq. ID No. 513, Seq. ID No. 515, Seq. ID No. 525, Seq. ID No. 545, Seq. ID No. 547, Seq. ID No. 557, Seq. ID No. 569, Seq. ID No. 589, Seq. ID No. 591, Seq. ID No. 593, Seq. ID No. 595, Seq. ID No. 609, Seq. ID No. 637, Seq. ID No. 639, Seq. ID No. 641, Seq. ID No. 653, Seq. ID No. 669, Seq. ID No. 679, Seq. ID No. 719, Seq. ID No. 723, Seq. ID No. 739, Seq. ID No. 749, Seq. ID No. 751, Seq. ID No. 763, Seq. ID No. 765, Seq. ID No. 769, Seq. ID No. 777, Seq. ID No. 779, Seq. ID No. 781, Seq. ID No. 819, Seq. ID No. 895, Seq. ID No. 903, Seq. ID No. 905, Seq. ID No. 909, Seq. ID No. 935, Seq. ID No. 937, Seq. ID No. 951, Seq. ID No. 955, Seq. ID No. 979, Seq. ID No. 981, Seq. ID No. 983, Seq. ID No. 985, Seq. ID No. 1005, Seq. ID No. 1007, Seq. ID No. 1009, Seq. ID No. 1015, Seq. ID No. 1019, Seq. ID No. 1029, Seq. ID No. 1031, Seq. ID No. 1047, Seq. ID No. 1091, Seq. ID No. 1111, Seq. ID No. 1137, Seq. ID No. 1151, Seq. ID No. 1153, Seq. ID No. 1169, Seq. ID No. 1173, Seq. ID No. 1183, Seq. ID No. 1191, Seq. ID No. 1193, Seq. ID No. 1213, Seq. ID No. 1223, Seq. ID No. 1229, Seq. ID No. 1247, Seq. ID No. 1259, Seq. ID No. 1283, Seq. ID No. 1307, Seq. ID No. 1319, Seq. ID No. 1321, Seq. ID No. 1327, Seq. ID No. 1341, Seq. ID No. 1343, Seq. ID No. 1347, Seq. ID No. 1389, Seq. ID

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Seq. ID No. 1681, Seq. ID No. 1695, Seq. ID No. 1703, Seq. ID No. 1705, Seq. ID No.
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1919, Seq. ID No. 1971, Seq. ID No. 1991, Seq. ID No. 2013, Seq. ID No. 2015, Seq. ID
10 No. 2017, Seq. ID No. 2019, Seq. ID No. 2033, Seq. ID No. 2035, Seq. ID No. 2049,
Seq. ID No. 2081, Seq. ID No. 2083, Seq. ID No. 2085, Seq. ID No. 2111, Seq. ID No.
2113, Seq. ID No. 2123, Seq. ID No. 2125, Seq. ID No. 2127, Seq. ID No. 2131, Seq. ID
No. 2133, Seq. ID No. 2153, Seq. ID No. 2161, Seq. ID No. 2171, Seq. ID No. 2175,
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15 2221, Seq. ID No. 2237, Seq. ID No. 2249, Seq. ID No. 2251, Seq. ID No. 2255, Seq. ID
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Seq. ID No. 2285, Seq. ID No. 2289, Seq. ID No. 2295, Seq. ID No. 2305, Seq. ID No.
2307, Seq. ID No. 2317, Seq. ID No. 2319, Seq. ID No. 2323, Seq. ID No. 2325, Seq. ID
No. 2343, Seq. ID No. 2349, Seq. ID No. 2385, Seq. ID No. 2393, Seq. ID No. 2423,
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3265, Seq. ID No. 3269, Seq. ID No. 3271, Seq. ID No. 3275, Seq. ID No. 3277, Seq. ID
5 Seq. ID No. 3405, Seq. ID No. 3419, Seq. ID No. 3421, Seq. ID No. 3423, Seq. ID No.
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3621, Seq. ID No. 3629, Seq. ID No. 3663, Seq. ID No. 3701, Seq. ID No. 3703, Seq. ID
10 No. 3723, Seq. ID No. 3737, Seq. ID No. 3741, Seq. ID No. 3745, Seq. ID No. 3747,
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3771, Seq. ID No. 3785, Seq. ID No. 3793, Seq. ID No. 3813, Seq. ID No. 3837, Seq. ID
No. 3839, Seq. ID No. 3861, Seq. ID No. 3865, Seq. ID No. 3889, Seq. ID No. 3891,
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In yet another preferred embodiment, the invention comprises an isolated polynucleotide of the *Alloiococcus otitidis* genomic sequence encoding a polypeptide, which is predicted by HMM SignalP algorithm analysis as having a signal peptide, and the polynucleotide is selected from one of Seq. ID No. 3, Seq. ID No. 7, Seq. ID No. 9, Seq. ID No. 19, Seq. ID No. 21, Seq. ID No. 31, Seq. ID No. 33, Seq. ID No. 45, Seq. ID No. 47, Seq. ID No. 49, Seq. ID No. 53, Seq. ID No. 65, Seq. ID No. 67, Seq. ID No. 85, Seq. ID No. 87, Seq. ID No. 105, Seq. ID No. 111, Seq. ID No. 123, Seq. ID No. 131, Seq. ID No. 133, Seq. ID No. 141, Seq. ID No. 159, Seq. ID No. 161, Seq. ID No. 163, Seq. ID No. 171, Seq. ID No. 191, Seq. ID No. 209, Seq. ID No. 211, Seq. ID No. 213, Seq. ID No. 215, Seq. ID No. 217, Seq. ID No. 225, Seq. ID No. 235, Seq. ID No. 237,

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In still yet another preferred embodiment, the invention comprises an isolated polynucleotide of the *Alloiococcus otitidis* genomic sequence encoding a polypeptide, which is predicted by HMM SignalP algorithm analysis as being a non-secretory protein, and the polypeptide is selected from Seq. ID No. 1, Seq. ID No. 5, Seq. ID No. 11, Seq. ID No. 13, Seq. ID No. 15, Seq. ID No. 17, Seq. ID No. 23, Seq. ID No. 25, Seq. ID No. 27, Seq. ID No. 29, Seq. ID No. 35, Seq. ID No. 37, Seq. ID No. 39, Seq. ID No. 41, Seq.

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In yet another preferred embodiment, the invention comprises an isolated polynucleotide of the *Alloiococcus otitidis* genomic sequence encoding a polypeptide, which was identified by BlastP analysis, and the polynucleotide is selected from one of Seq. ID No. 9, Seq. ID No. 17, Seq. ID No. 45, Seq. ID No. 49, Seq. ID No. 53, Seq. ID No. 59, Seq. ID No. 89, Seq. ID No. 145, Seq. ID No. 157, Seq. ID No. 167, Seq. ID No. 171, Seq. ID No. 191, Seq. ID No. 215, Seq. ID No. 217, Seq. ID No. 225, Seq. ID No. 239, Seq. ID No. 253, Seq. ID No. 273, Seq. ID No. 277, Seq. ID No. 289, Seq. ID No. 329, Seq. ID No. 343, Seq. ID No. 345, Seq. ID No. 375, Seq. ID No. 501, Seq. ID No. 505, Seq. ID No. 511, Seq. ID No. 515, Seq. ID No. 529, Seq. ID No. 569, Seq. ID No. 575, Seq. ID No. 593, Seq. ID No. 595, Seq. ID No. 637, Seq. ID No. 659, Seq. ID No. 669, Seq. ID No. 675, Seq. ID No. 681, Seq. ID No. 729, Seq. ID No. 779, Seq. ID No. 819, Seq. ID No. 895, Seq. ID No. 921, Seq. ID No. 935, Seq. ID No. 955, Seq. ID No. 967, Seq. ID No. 985, Seq. ID No. 1017, Seq. ID No. 1039, Seq. ID No. 1075, Seq. ID No. 1089, Seq. ID No. 1137, Seq. ID No. 1223, Seq. ID No. 1241, Seq. ID No. 1315, Seq. ID No. 1331, Seq. ID No. 1369, Seq. ID No. 1459, Seq. ID No. 1517, Seq. ID No. 1561, Seq. ID No. 1563, Seq. ID No. 1567, Seq. ID No. 1571, Seq. ID No. 1573, Seq. ID No. 1601, Seq. ID No. 1607, Seq. ID No. 1613, Seq. ID No. 1619, Seq. ID No. 1641, Seq. ID No. 1647, Seq. ID No. 1653, Seq. ID No. 1657, Seq. ID No. 1665, Seq. ID No. 1699, Seq. ID No. 1713, Seq. ID No. 1751, Seq. ID No. 1771, Seq. ID No. 1785, Seq. ID No. 1789, Seq. ID No. 1791, Seq. ID No. 1797, Seq. ID No. 1811, Seq. ID No. 1817, Seq. ID No. 1819, Seq. ID No. 1821, Seq. ID No. 1871, Seq. ID No. 1895, Seq. ID No. 1905, Seq. ID No. 1913, Seq. ID No. 1919, Seq. ID No. 1923, Seq. ID No. 1965, Seq. ID No. 1971, Seq. ID No. 1999, Seq. ID No. 2047, Seq. ID No. 2055, Seq. ID No. 2091, Seq. ID No. 2093, Seq. ID No. 2115, Seq. ID No. 2119, Seq. ID No. 2127, Seq. ID No.

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No. 4931, Seq. ID No. 4959, Seq. ID No. 4963, Seq. ID No. 4985, Seq. ID No. 5113,
Seq. ID No. 5115, Seq. ID No. 5117, Seq. ID No. 5125, Seq. ID No. 5141, Seq. ID No.

5183, Seq. ID No. 5201, Seq. ID No. 5205, Seq. ID No. 5213, Seq. ID No. 5219, Seq. ID No. 5279, Seq. ID No. 5285, Seq. ID No. 5331, Seq. ID No. 5381, Seq. ID No. 5389, Seq. ID No. 5405, Seq. ID No. 5411, Seq. ID No. 5419, Seq. ID No. 5433, Seq. ID No. 5463, Seq. ID No. 5477, Seq. ID No. 5491, Seq. ID No. 5509, Seq. ID No. 5513, Seq. ID No. 5525, Seq. ID No. 5529, Seq. ID No. 5537, Seq. ID No. 5567, Seq. ID No. 5599, Seq. ID No. 5621, Seq. ID No. 5637, Seq. ID No. 5699, Seq. ID No. 5723, Seq. ID No. 5733, Seq. ID No. 5761, Seq. ID No. 5791, Seq. ID No. 5895, Seq. ID No. 5901, Seq. ID No. 5903, Seq. ID No. 5909, Seq. ID No. 5913, Seq. ID No. 5919, Seq. ID No. 5929, Seq. ID No. 5939, Seq. ID No. 6001, Seq. ID No. 6043, Seq. ID No. 6053, Seq. ID No. 6057, Seq. ID No. 6089, Seq. ID No. 6095, Seq. ID No. 6103, Seq. ID No. 6111, Seq. ID No. 6117, Seq. ID No. 6165, Seq. ID No. 6169, Seq. ID No. 6185, Seq. ID No. 6191, Seq. ID No. 6209, Seq. ID No. 6229, Seq. ID No. 6257, Seq. ID No. 6263, Seq. ID No. 6271, Seq. ID No. 6275, Seq. ID No. 6289, Seq. ID No. 6303, Seq. ID No. 6365, Seq. ID No. 6369, Seq. ID No. 6383, and Seq. ID No. 6415.

15 In still yet another preferred embodiment, the invention comprises an isolated polynucleotide of the *Alloiococcus otitidis* genomic sequence encoding a polypeptide identified by Pfam analysis, and the polynucleotide is selected from one of Seq. ID No. 89, Seq. ID No. 145, Seq. ID No. 155, Seq. ID No. 167, Seq. ID No. 173, Seq. ID No. 191, Seq. ID No. 215, Seq. ID No. 219, Seq. ID No. 221, Seq. ID No. 223, Seq. ID No. 225, Seq. ID No. 233, Seq. ID No. 239, Seq. ID No. 251, Seq. ID No. 253, Seq. ID No. 271, Seq. ID No. 291, Seq. ID No. 331, Seq. ID No. 341, Seq. ID No. 345, Seq. ID No. 375, Seq. ID No. 501, Seq. ID No. 505, Seq. ID No. 511, Seq. ID No. 529, Seq. ID No. 567, Seq. ID No. 569, Seq. ID No. 575, Seq. ID No. 593, Seq. ID No. 595, Seq. ID No. 601, Seq. ID No. 637, Seq. ID No. 649, Seq. ID No. 661, Seq. ID No. 669, Seq. ID No. 675, Seq. ID No. 681, Seq. ID No. 683, Seq. ID No. 729, Seq. ID No. 753, Seq. ID No. 779, Seq. ID No. 827, Seq. ID No. 839, Seq. ID No. 895, Seq. ID No. 939, Seq. ID No. 969, Seq. ID No. 985, Seq. ID No. 1015, Seq. ID No. 1039, Seq. ID No. 1075, Seq. ID No. 1137, Seq. ID No. 1155, Seq. ID No. 1163, Seq. ID No. 1175, Seq. ID No. 1223, Seq. ID No. 1231, Seq. ID No. 1237, Seq. ID No. 1241, Seq. ID No. 1261, Seq. ID No. 1331, Seq. ID No. 1339, Seq. ID No. 1369, Seq. ID No. 1477, Seq. ID No. 1517, Seq. ID No. 1531, Seq. ID No. 1539, Seq. ID No. 1549, Seq. ID No. 1563, Seq. ID No. 1567, Seq. ID No. 1571, Seq. ID No. 1573, Seq. ID No. 1589, Seq. ID No. 1595, Seq. ID No. 1647, Seq. ID No. 1657, Seq. ID No. 1771, Seq. ID No. 1785, Seq. ID No. 1789, Seq. ID

No. 1819, Seq. ID No. 1821, Seq. ID No. 1969, Seq. ID No. 2015, Seq. ID No. 2047,
Seq. ID No. 2087, Seq. ID No. 2089, Seq. ID No. 2093, Seq. ID No. 2115, Seq. ID No.
2117, Seq. ID No. 2127, Seq. ID No. 2141, Seq. ID No. 2179, Seq. ID No. 2207, Seq. ID
No. 2223, Seq. ID No. 2253, Seq. ID No. 2275, Seq. ID No. 2301, Seq. ID No. 2315,
5 Seq. ID No. 2329, Seq. ID No. 2343, Seq. ID No. 2349, Seq. ID No. 2363, Seq. ID No.
2381, Seq. ID No. 2391, Seq. ID No. 2417, Seq. ID No. 2421, Seq. ID No. 2423, Seq. ID
No. 2429, Seq. ID No. 2481, Seq. ID No. 2487, Seq. ID No. 2489, Seq. ID No. 2491,
Seq. ID No. 2509, Seq. ID No. 2519, Seq. ID No. 2525, Seq. ID No. 2547, Seq. ID No.
2553, Seq. ID No. 2563, Seq. ID No. 2587, Seq. ID No. 2599, Seq. ID No. 2607, Seq. ID
10 No. 2613, Seq. ID No. 2651, Seq. ID No. 2675, Seq. ID No. 2681, Seq. ID No. 2687,
Seq. ID No. 2693, Seq. ID No. 2699, Seq. ID No. 2703, Seq. ID No. 2709, Seq. ID No.
2711, Seq. ID No. 2727, Seq. ID No. 2753, Seq. ID No. 2819, Seq. ID No. 2821, Seq. ID
No. 2823, Seq. ID No. 2867, Seq. ID No. 2871, Seq. ID No. 2907, Seq. ID No. 2919,
Seq. ID No. 2957, Seq. ID No. 2971, Seq. ID No. 2979, Seq. ID No. 2999, Seq. ID No.
15 3005, Seq. ID No. 3019, Seq. ID No. 3035, Seq. ID No. 3065, Seq. ID No. 3085, Seq. ID
No. 3149, Seq. ID No. 3165, Seq. ID No. 3183, Seq. ID No. 3203, Seq. ID No. 3211,
Seq. ID No. 3251, Seq. ID No. 3259, Seq. ID No. 3319, Seq. ID No. 3323, Seq. ID No.
3335, Seq. ID No. 3337, Seq. ID No. 3347, Seq. ID No. 3359, Seq. ID No. 3377, Seq. ID
No. 3379, Seq. ID No. 3399, Seq. ID No. 3425, Seq. ID No. 3483, Seq. ID No. 3495,
20 Seq. ID No. 3497, Seq. ID No. 3519, Seq. ID No. 3529, Seq. ID No. 3599, Seq. ID No.
3611, Seq. ID No. 3615, Seq. ID No. 3619, Seq. ID No. 3663, Seq. ID No. 3739, Seq. ID
No. 3759, Seq. ID No. 3771, Seq. ID No. 3797, Seq. ID No. 3825, Seq. ID No. 3841,
Seq. ID No. 3855, Seq. ID No. 3863, Seq. ID No. 3901, Seq. ID No. 3929, Seq. ID No.
4015, Seq. ID No. 4017, Seq. ID No. 4055, Seq. ID No. 4075, Seq. ID No. 4085, Seq. ID
25 No. 4089, Seq. ID No. 4099, Seq. ID No. 4105, Seq. ID No. 4129, Seq. ID No. 4203,
Seq. ID No. 4243, Seq. ID No. 4251, Seq. ID No. 4343, Seq. ID No. 4383, Seq. ID No.
4475, Seq. ID No. 4481, Seq. ID No. 4487, Seq. ID No. 4491, Seq. ID No. 4533, Seq. ID
No. 4627, Seq. ID No. 4705, Seq. ID No. 4713, Seq. ID No. 4717, Seq. ID No. 4719,
Seq. ID No. 4729, Seq. ID No. 4789, Seq. ID No. 4791, Seq. ID No. 4793, Seq. ID No.
30 4803, Seq. ID No. 4813, Seq. ID No. 4815, Seq. ID No. 4825, Seq. ID No. 4833, Seq. ID
No. 4837, Seq. ID No. 4875, Seq. ID No. 4879, Seq. ID No. 4919, Seq. ID No. 4931,
Seq. ID No. 4947, Seq. ID No. 4985, Seq. ID No. 5077, Seq. ID No. 5115, Seq. ID No.
5117, Seq. ID No. 5127, Seq. ID No. 5141, Seq. ID No. 5193, Seq. ID No. 5215, Seq. ID

No. 5219, Seq. ID No. 5275, Seq. ID No. 5381, Seq. ID No. 5389, Seq. ID No. 5409, Seq. ID No. 5411, Seq. ID No. 5475, Seq. ID No. 5491, Seq. ID No. 5513, Seq. ID No. 5519, Seq. ID No. 5525, Seq. ID No. 5529, Seq. ID No. 5537, Seq. ID No. 5557, Seq. ID No. 5581, Seq. ID No. 5599, Seq. ID No. 5637, Seq. ID No. 5685, Seq. ID No. 5723, Seq. ID No. 5755, Seq. ID No. 5761, Seq. ID No. 5895, Seq. ID No. 5901, Seq. ID No. 5903, Seq. ID No. 5911, Seq. ID No. 5913, Seq. ID No. 5919, Seq. ID No. 5923, Seq. ID No. 5929, Seq. ID No. 6001, Seq. ID No. 6043, Seq. ID No. 6053, Seq. ID No. 6055, Seq. ID No. 6089, Seq. ID No. 6095, Seq. ID No. 6111, Seq. ID No. 6117, Seq. ID No. 6165, Seq. ID No. 6169, Seq. ID No. 6187, Seq. ID No. 6195, Seq. ID No. 6219, Seq. ID No. 6233, Seq. ID No. 6269, Seq. ID No. 6275, Seq. ID No. 6279, Seq. ID No. 6287, Seq. ID No. 6297, Seq. ID No. 6299, Seq. ID No. 6305, Seq. ID No. 6311, Seq. ID No. 6369, Seq. ID No. 6379, Seq. ID No. 6587, and Seq. ID No. 6591.

In another preferred embodiment, the invention comprises an isolated polynucleotide of the *Alloiococcus otitidis* genomic sequence encoding a polypeptide, and which has been identified using the proteomic methods used for studying surface proteins of *Streptococcus pneumoniae*, and the polynucleotide is selected from one of Seq. ID No. 1, Seq. ID No. 5, Seq. ID No. 93, Seq. ID No. 95, Seq. ID No. 103, Seq. ID No. 107, Seq. ID No. 157, Seq. ID No. 223, Seq. ID No. 225, Seq. ID No. 233, Seq. ID No. 239, Seq. ID No. 253, Seq. ID No. 317, Seq. ID No. 321, Seq. ID No. 341, Seq. ID No. 345, Seq. ID No. 353, Seq. ID No. 361, Seq. ID No. 363, Seq. ID No. 365, Seq. ID No. 375, Seq. ID No. 379, Seq. ID No. 383, Seq. ID No. 389, Seq. ID No. 391, Seq. ID No. 397, Seq. ID No. 405, Seq. ID No. 409, Seq. ID No. 415, Seq. ID No. 423, Seq. ID No. 425, Seq. ID No. 427, Seq. ID No. 429, Seq. ID No. 435, Seq. ID No. 437, Seq. ID No. 439, Seq. ID No. 441, Seq. ID No. 443, Seq. ID No. 445, Seq. ID No. 447, Seq. ID No. 449, Seq. ID No. 461, Seq. ID No. 463, Seq. ID No. 465, Seq. ID No. 513, Seq. ID No. 543, Seq. ID No. 551, Seq. ID No. 553, Seq. ID No. 559, Seq. ID No. 595, Seq. ID No. 601, Seq. ID No. 637, Seq. ID No. 649, Seq. ID No. 657, Seq. ID No. 669, Seq. ID No. 675, Seq. ID No. 683, Seq. ID No. 753, Seq. ID No. 929, Seq. ID No. 969, Seq. ID No. 1041, Seq. ID No. 1043, Seq. ID No. 1085, Seq. ID No. 1089, Seq. ID No. 1093, Seq. ID No. 1097, Seq. ID No. 1099, Seq. ID No. 1101, Seq. ID No. 1175, Seq. ID No. 1205, Seq. ID No. 1237, Seq. ID No. 1459, Seq. ID No. 1495, Seq. ID No. 1497, Seq. ID No. 1503, Seq. ID No. 1517, Seq. ID No. 1527, Seq. ID No. 1531, Seq. ID No. 1539, Seq. ID No. 1543, Seq. ID No. 1549, Seq. ID No. 1573, Seq. ID No. 1657, Seq. ID No.

1709, Seq. ID No. 1767, Seq. ID No. 1785, Seq. ID No. 1821, Seq. ID No. 1889, Seq. ID
No. 1925, Seq. ID No. 1969, Seq. ID No. 2003, Seq. ID No. 2047, Seq. ID No. 2075,
Seq. ID No. 2089, Seq. ID No. 2093, Seq. ID No. 2117, Seq. ID No. 2137, Seq. ID No.
2143, Seq. ID No. 2205, Seq. ID No. 2235, Seq. ID No. 2257, Seq. ID No. 2301, Seq. ID
5 No. 2363, Seq. ID No. 2423, Seq. ID No. 2445, Seq. ID No. 2451, Seq. ID No. 2481,
Seq. ID No. 2495, Seq. ID No. 2505, Seq. ID No. 2577, Seq. ID No. 2587, Seq. ID No.
2613, Seq. ID No. 2633, Seq. ID No. 2651, Seq. ID No. 2665, Seq. ID No. 2669, Seq. ID
No. 2677, Seq. ID No. 2687, Seq. ID No. 2693, Seq. ID No. 2699, Seq. ID No. 2711,
Seq. ID No. 2715, Seq. ID No. 2757, Seq. ID No. 2791, Seq. ID No. 2793, Seq. ID No.
10 2803, Seq. ID No. 2867, Seq. ID No. 2919, Seq. ID No. 2929, Seq. ID No. 3005, Seq. ID
No. 3019, Seq. ID No. 3125, Seq. ID No. 3137, Seq. ID No. 3161, Seq. ID No. 3179,
Seq. ID No. 3251, Seq. ID No. 3259, Seq. ID No. 3285, Seq. ID No. 3309, Seq. ID No.
3317, Seq. ID No. 3337, Seq. ID No. 3345, Seq. ID No. 3359, Seq. ID No. 3475, Seq. ID
No. 3515, Seq. ID No. 3521, Seq. ID No. 3641, Seq. ID No. 3695, Seq. ID No. 3793,
15 Seq. ID No. 3901, Seq. ID No. 3927, Seq. ID No. 3987, Seq. ID No. 4001, Seq. ID No.
4057, Seq. ID No. 4081, Seq. ID No. 4111, Seq. ID No. 4125, Seq. ID No. 4193, Seq. ID
No. 4195, Seq. ID No. 4237, Seq. ID No. 4247, Seq. ID No. 4383, Seq. ID No. 4393,
Seq. ID No. 4397, Seq. ID No. 4401, Seq. ID No. 4435, Seq. ID No. 4449, Seq. ID No.
4471, Seq. ID No. 4491, Seq. ID No. 4511, Seq. ID No. 4519, Seq. ID No. 4531, Seq. ID
20 No. 4549, Seq. ID No. 4577, Seq. ID No. 4581, Seq. ID No. 4585, Seq. ID No. 4609,
Seq. ID No. 4611, Seq. ID No. 4613, Seq. ID No. 4675, Seq. ID No. 4685, Seq. ID No.
4719, Seq. ID No. 4729, Seq. ID No. 4743, Seq. ID No. 4755, Seq. ID No. 4781, Seq. ID
No. 4787, Seq. ID No. 4837, Seq. ID No. 4841, Seq. ID No. 4849, Seq. ID No. 4855,
Seq. ID No. 4889, Seq. ID No. 4901, Seq. ID No. 4915, Seq. ID No. 4917, Seq. ID No.
25 4931, Seq. ID No. 4935, Seq. ID No. 4977, Seq. ID No. 5025, Seq. ID No. 5029, Seq. ID
No. 5109, Seq. ID No. 5115, Seq. ID No. 5117, Seq. ID No. 5155, Seq. ID No. 5185,
Seq. ID No. 5201, Seq. ID No. 5203, Seq. ID No. 5219, Seq. ID No. 5261, Seq. ID No.
5289, Seq. ID No. 5295, Seq. ID No. 5377, Seq. ID No. 5389, Seq. ID No. 5399, Seq. ID
No. 5411, Seq. ID No. 5537, Seq. ID No. 5621, Seq. ID No. 5627, Seq. ID No. 5657,
30 Seq. ID No. 5675, Seq. ID No. 5717, Seq. ID No. 5777, Seq. ID No. 5859, Seq. ID No.
5901, Seq. ID No. 5913, Seq. ID No. 5919, Seq. ID No. 5925, Seq. ID No. 5933, Seq. ID
No. 6055, Seq. ID No. 6129, Seq. ID No. 6133, Seq. ID No. 6187, Seq. ID No. 6193,

Seq. ID No. 6219, Seq. ID No. 6271, Seq. ID No. 6277, Seq. ID No. 6369, Seq. ID No. 6375, Seq. ID No. 6379, Seq. ID No. 6389, Seq. ID No. 6591, and Seq. ID No. 6605.

In another preferred embodiment, the invention comprises an isolated polynucleotide of the *Alloiococcus otitidis* genomic sequence encoding a polypeptide, wherein the polypeptide encoded by the polynucleotide was identified using HMM LPXTG motif finder as having a LPXTG motif, and wherein the polypeptide is covalently attached to the peptidoglycan layer, and the polynucleotide is selected from one Seq. ID No. 503, Seq. ID No. 505, Seq. ID No. 1315, Seq. ID No. 1317, Seq. ID No. 1363, Seq. ID No. 1365, Seq. ID No. 1367, Seq. ID No. 1369, Seq. ID No. 1559, Seq. ID No. 1561, Seq. ID No. 1581, Seq. ID No. 1739, Seq. ID No. 1741, Seq. ID No. 2811, Seq. ID No. 2813, Seq. ID No. 3619, Seq. ID No. 5587, Seq. ID No. 5589, Seq. ID No. 5591, Seq. ID No. 5781, Seq. ID No. 5783, and Seq. ID No. 6103.

In another preferred embodiment, the invention comprises an isolated polynucleotide of the *Alloiococcus otitidis* genomic sequence encoding a lipoprotein as predicted by HMM Lipo software program, and the polynucleotide is selected from Seq. ID No. 45, Seq. ID No. 47, Seq. ID No. 171, Seq. ID No. 225, Seq. ID No. 419, Seq. ID No. 513, Seq. ID No. 575, Seq. ID No. 591, Seq. ID No. 593, Seq. ID No. 657, Seq. ID No. 659, Seq. ID No. 669, Seq. ID No. 675, Seq. ID No. 745, Seq. ID No. 747, Seq. ID No. 935, Seq. ID No. 1045, Seq. ID No. 1075, Seq. ID No. 1137, Seq. ID No. 1173, Seq. ID No. 1191, Seq. ID No. 1193, Seq. ID No. 1195, Seq. ID No. 1563, Seq. ID No. 1661, Seq. ID No. 1663, Seq. ID No. 1665, Seq. ID No. 1791, Seq. ID No. 1797, Seq. ID No. 1917, Seq. ID No. 1969, Seq. ID No. 2115, Seq. ID No. 2159, Seq. ID No. 2429, Seq. ID No. 2527, Seq. ID No. 2699, Seq. ID No. 2815, Seq. ID No. 2875, Seq. ID No. 2975, Seq. ID No. 2977, Seq. ID No. 2991, Seq. ID No. 3043, Seq. ID No. 3323, Seq. ID No. 3337, Seq. ID No. 4133, Seq. ID No. 4137, Seq. ID No. 4481, Seq. ID No. 4705, Seq. ID No. 4827, Seq. ID No. 4869, Seq. ID No. 5115, Seq. ID No. 5377, Seq. ID No. 5379, Seq. ID No. 5491, Seq. ID No. 5509, Seq. ID No. 5513, Seq. ID No. 5525, Seq. ID No. 5529, Seq. ID No. 5531, Seq. ID No. 5889, Seq. ID No. 5909, Seq. ID No. 6025, Seq. ID No. 6027, Seq. ID No. 6087, Seq. ID No. 6089, Seq. ID No. 6325, Seq. ID No. 6327, Seq. ID No. 6415, Seq. ID No. 6637, Seq. ID No. 6639, and Seq. ID No. 6645.

In another preferred embodiment, the invention comprises an isolated polynucleotide of the *Alloiococcus otitidis* genomic sequence encoding a polypeptide, wherein the polypeptide encoded by the polynucleotide is predicted by HMM program to

be non-covalently bound to the peptidoglycan layer, and the polynucleotide is selected from Seq. ID No. 3589, Seq. ID No. 3987, Seq. ID No. 5219, and Seq. ID No. 5337.

In another preferred embodiment, the invention comprises an isolated polynucleotide of the *Alloioococcus otitidis* genomic sequence encoding a polypeptide,

5 wherein the polypeptide encodes a polypeptide having a RGD_X motif wherein X is not a proline, and the polynucleotide is selected from Seq. ID No. 37, Seq. ID No. 99, Seq. ID

No. 107, Seq. ID No. 109, Seq. ID No. 111, Seq. ID No. 351, Seq. ID No. 353, Seq. ID No. 465, Seq. ID No. 467, Seq. ID No. 469, Seq. ID No. 471, Seq. ID No. 683, Seq. ID

No. 821, Seq. ID No. 823, Seq. ID No. 1021, Seq. ID No. 1023, Seq. ID No. 1157, Seq.

10 ID No. 1159, Seq. ID No. 1233, Seq. ID No. 1333, Seq. ID No. 1335, Seq. ID No. 1449,

Seq. ID No. 1559, Seq. ID No. 1561, Seq. ID No. 1563, Seq. ID No. 1625, Seq. ID No.

1777, Seq. ID No. 1827, Seq. ID No. 1829, Seq. ID No. 1871, Seq. ID No. 1925, Seq. ID

No. 2135, Seq. ID No. 2145, Seq. ID No. 2173, Seq. ID No. 2175, Seq. ID No. 2177,

Seq. ID No. 2179, Seq. ID No. 2259, Seq. ID No. 2317, Seq. ID No. 2319, Seq. ID No.

15 2321, Seq. ID No. 2323, Seq. ID No. 2325, Seq. ID No. 2327, Seq. ID No. 2329, Seq. ID

No. 2401, Seq. ID No. 2671, Seq. ID No. 2863, Seq. ID No. 2869, Seq. ID No. 2919,

Seq. ID No. 2921, Seq. ID No. 2993, Seq. ID No. 3087, Seq. ID No. 3137, Seq. ID No.

3279, Seq. ID No. 3281, Seq. ID No. 3283, Seq. ID No. 3333, Seq. ID No. 3335, Seq. ID

No. 3497, Seq. ID No. 3499, Seq. ID No. 3501, Seq. ID No. 3533, Seq. ID No. 3671,

20 Seq. ID No. 3673, Seq. ID No. 3675, Seq. ID No. 3837, Seq. ID No. 3839, Seq. ID No.

3841, Seq. ID No. 3843, Seq. ID No. 3929, Seq. ID No. 3961, Seq. ID No. 4037, Seq. ID

No. 4193, Seq. ID No. 4239, Seq. ID No. 4327, Seq. ID No. 4329, Seq. ID No. 4333,

Seq. ID No. 4393, Seq. ID No. 4463, Seq. ID No. 4465, Seq. ID No. 4467, Seq. ID No.

4597, Seq. ID No. 4629, Seq. ID No. 4631, Seq. ID No. 4675, Seq. ID No. 4677, Seq. ID

25 No. 4679, Seq. ID No. 4689, Seq. ID No. 4691, Seq. ID No. 4693, Seq. ID No. 4781,

Seq. ID No. 4799, Seq. ID No. 4801, Seq. ID No. 4803, Seq. ID No. 4861, Seq. ID No.

5009, Seq. ID No. 5143, Seq. ID No. 5145, Seq. ID No. 5179, Seq. ID No. 5181, Seq. ID

No. 5183, Seq. ID No. 5249, Seq. ID No. 5251, Seq. ID No. 5253, Seq. ID No. 5259,

Seq. ID No. 5261, Seq. ID No. 5293, Seq. ID No. 5295, Seq. ID No. 5297, Seq. ID No.

30 5299, Seq. ID No. 5307, Seq. ID No. 5309, Seq. ID No. 5411, Seq. ID No. 5535, Seq. ID

No. 5537, Seq. ID No. 5745, Seq. ID No. 5821, Seq. ID No. 5823, Seq. ID No. 5825,

Seq. ID No. 6029, Seq. ID No. 6171, Seq. ID No. 6307, Seq. ID No. 6309, and Seq. ID

No. 6311.

In another preferred embodiment, the polynucleotide is selected from the *Alloiococcus otitidis* polynucleotides that are predicted by BlastP analysis as encoding polypeptides involved in capsule biosynthesis and transport, and the polynucleotide is selected from Seq. ID No. 49, Seq. ID No. 51, Seq. ID No. 53, Seq. ID No. 59, Seq. ID No. 195, Seq. ID No. 689, Seq. ID No. 703, Seq. ID No. 925, Seq. ID No. 1597, Seq. ID No. 1601, Seq. ID No. 1607, Seq. ID No. 1611, Seq. ID No. 1613, Seq. ID No. 1713, Seq. ID No. 2029, Seq. ID No. 2263, Seq. ID No. 2269, Seq. ID No. 2373, Seq. ID No. 2437, Seq. ID No. 2651, Seq. ID No. 2767, Seq. ID No. 2907, Seq. ID No. 3397, Seq. ID No. 3399, Seq. ID No. 3479, Seq. ID No. 3487, Seq. ID No. 3491, Seq. ID No. 3493, Seq. ID No. 3495, Seq. ID No. 3497, Seq. ID No. 3519, Seq. ID No. 3521, Seq. ID No. 3529, Seq. ID No. 3535, Seq. ID No. 3561, Seq. ID No. 3883, Seq. ID No. 3891, Seq. ID No. 3981, and Seq. ID No. 4087.

In yet another preferred embodiment, the polynucleotide is selected from the *Alloiococcus otitidis* polynucleotides that encodes a polypeptide identified by BlastP analysis as being localized within the capsular loci of the *Alloiococcus otitidis* genome, and the polynucleotide is selected from one of Seq. ID No. 45, Seq. ID No. 47, Seq. ID No. 51, Seq. ID No. 53, Seq. ID No. 55, Seq. ID No. 57, Seq. ID No. 59, Seq. ID No. 683, Seq. ID No. 685, Seq. ID No. 687, Seq. ID No. 689, Seq. ID No. 691, Seq. ID No. 693, Seq. ID No. 695, Seq. ID No. 697, Seq. ID No. 699, Seq. ID No. 701, Seq. ID No. 703, Seq. ID No. 705, Seq. ID No. 707, Seq. ID No. 709, Seq. ID No. 711, Seq. ID No. 713, Seq. ID No. 715, Seq. ID No. 717, Seq. ID No. 719, Seq. ID No. 721, Seq. ID No. 723, Seq. ID No. 725, Seq. ID No. 727, Seq. ID No. 729, Seq. ID No. 731, Seq. ID No. 733, Seq. ID No. 735, Seq. ID No. 737, Seq. ID No. 739, Seq. ID No. 741, Seq. ID No. 743, Seq. ID No. 745, Seq. ID No. 747, Seq. ID No. 749, Seq. ID No. 751, Seq. ID No. 753, Seq. ID No. 3389, Seq. ID No. 3391, Seq. ID No. 3393, Seq. ID No. 3395, Seq. ID No. 3397, Seq. ID No. 3399, Seq. ID No. 3401, Seq. ID No. 3403, Seq. ID No. 3405, Seq. ID No. 3407, Seq. ID No. 3409, Seq. ID No. 3411, Seq. ID No. 3413, Seq. ID No. 3415, Seq. ID No. 3417, Seq. ID No. 3419, Seq. ID No. 3421, Seq. ID No. 3423, Seq. ID No. 3425, Seq. ID No. 3427, Seq. ID No. 3429, Seq. ID No. 3431, Seq. ID No. 3433, Seq. ID No. 3435, Seq. ID No. 3437, Seq. ID No. 3439, Seq. ID No. 3441, Seq. ID No. 3443, Seq. ID No. 3445, Seq. ID No. 3447, Seq. ID No. 3449, Seq. ID No. 3451, Seq. ID No. 3453, Seq. ID No. 3455, Seq. ID No. 3457, Seq. ID No. 3459, Seq. ID No. 3461, Seq. ID No. 3463, Seq. ID No. 3465, Seq. ID No. 3467, Seq. ID No. 3469, Seq. ID No. 3471,

Seq. ID No. 3473, Seq. ID No. 3475, Seq. ID No. 3477, Seq. ID No. 3479, Seq. ID No. 3481, Seq. ID No. 3483, Seq. ID No. 3485, Seq. ID No. 3487, Seq. ID No. 3489, Seq. ID No. 3491, Seq. ID No. 3493, Seq. ID No. 3495, Seq. ID No. 3497, Seq. ID No. 3499, Seq. ID No. 3501, Seq. ID No. 3503, Seq. ID No. 3505, Seq. ID No. 3507, Seq. ID No. 3509, Seq. ID No. 3511, Seq. ID No. 3513, Seq. ID No. 3515, Seq. ID No. 3517, Seq. ID No. 3519, Seq. ID No. 3521, Seq. ID No. 3523, Seq. ID No. 3525, Seq. ID No. 3527, Seq. ID No. 3529, Seq. ID No. 3531, Seq. ID No. 3533, Seq. ID No. 3535, Seq. ID No. 3537, Seq. ID No. 3539, Seq. ID No. 3541, Seq. ID No. 3543, Seq. ID No. 3545, Seq. ID No. 3547, Seq. ID No. 3549, Seq. ID No. 3551, Seq. ID No. 3553, Seq. ID No. 3555, Seq. ID No. 3557, Seq. ID No. 3559, and Seq. ID No. 3561.

In another preferred embodiment, the polynucleotide is selected from the *Alloiococcus otitidis* polynucleotides identified by BlastP analysis as encoding polypeptides, which are associated with sporulation, and the polynucleotide is selected from one of Seq. ID No. 1137, Seq. ID No. 1455, Seq. ID No. 2137, Seq. ID No. 2141, Seq. ID No. 2165, Seq. ID No. 2179, Seq. ID No. 2301, Seq. ID No. 2753, Seq. ID No. 4211, Seq. ID No. 4251, Seq. ID No. 4327, Seq. ID No. 4569, Seq. ID No. 4719, and Seq. ID No. 4729.

In another preferred embodiment, the polynucleotide is selected from the *Alloiococcus otitidis* polynucleotides identified by BlastP analysis as being unique and having a BlastP 'E' value of $> e^{-10}$, and the polynucleotide is selected from one of Seq. ID No. 7, Seq. ID No. 19, Seq. ID No. 21, Seq. ID No. 23, Seq. ID No. 31, Seq. ID No. 39, Seq. ID No. 65, Seq. ID No. 67, Seq. ID No. 69, Seq. ID No. 91, Seq. ID No. 99, Seq. ID No. 105, Seq. ID No. 113, Seq. ID No. 115, Seq. ID No. 123, Seq. ID No. 125, Seq. ID No. 127, Seq. ID No. 131, Seq. ID No. 133, Seq. ID No. 139, Seq. ID No. 151, Seq. ID No. 159, Seq. ID No. 161, Seq. ID No. 163, Seq. ID No. 165, Seq. ID No. 169, Seq. ID No. 185, Seq. ID No. 189, Seq. ID No. 193, Seq. ID No. 229, Seq. ID No. 231, Seq. ID No. 255, Seq. ID No. 257, Seq. ID No. 259, Seq. ID No. 275, Seq. ID No. 337, Seq. ID No. 339, Seq. ID No. 347, Seq. ID No. 349, Seq. ID No. 357, Seq. ID No. 359, Seq. ID No. 369, Seq. ID No. 371, Seq. ID No. 377, Seq. ID No. 385, Seq. ID No. 387, Seq. ID No. 393, Seq. ID No. 399, Seq. ID No. 401, Seq. ID No. 403, Seq. ID No. 407, Seq. ID No. 419, Seq. ID No. 431, Seq. ID No. 477, Seq. ID No. 495, Seq. ID No. 507, Seq. ID No. 519, Seq. ID No. 541, Seq. ID No. 545, Seq. ID No. 547, Seq. ID No. 549, Seq. ID No. 557, Seq. ID No. 589, Seq. ID No. 617, Seq. ID No. 619, Seq. ID No. 633, Seq. ID

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15 1077, Seq. ID No. 1105, Seq. ID No. 1107, Seq. ID No. 1111, Seq. ID No. 1131, Seq. ID
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1973, Seq. ID No. 1977, Seq. ID No. 1981, Seq. ID No. 2005, Seq. ID No. 2007, Seq. ID
No. 2009, Seq. ID No. 2011, Seq. ID No. 2017, Seq. ID No. 2019, Seq. ID No. 2023,
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15 2043, Seq. ID No. 2045, Seq. ID No. 2049, Seq. ID No. 2081, Seq. ID No. 2083, Seq. ID
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15 3995, Seq. ID No. 3997, Seq. ID No. 4005, Seq. ID No. 4007, Seq. ID No. 4009, Seq. ID
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In yet another preferred embodiment, the polynucleotide is selected from the *Alloioococcus otitidis* polynucleotides, which encode polypeptides, identified by Glimmer™ ORF finder program, and the polynucleotide is selected from one of Seq. ID No. 1, Seq. ID No. 5, Seq. ID No. 11, Seq. ID No. 13, Seq. ID No. 15, Seq. ID No. 17, Seq. ID No. 25, Seq. ID No. 27, Seq. ID No. 29, Seq. ID No. 35, Seq. ID No. 37, Seq. ID No. 41, Seq. ID No. 43, Seq. ID No. 47, Seq. ID No. 51, Seq. ID No. 53, Seq. ID No. 59, Seq. ID No. 63, Seq. ID No. 69, Seq. ID No. 73, Seq. ID No. 75, Seq. ID No. 81, Seq. ID No. 83, Seq. ID No. 89, Seq. ID No. 93, Seq. ID No. 97, Seq. ID No. 103, Seq. ID No. 111, Seq. ID No. 121, Seq. ID No. 125, Seq. ID No. 129, Seq. ID No. 135, Seq. ID No. 137, Seq. ID No. 145, Seq. ID No. 149, Seq. ID No. 157, Seq. ID No. 167, Seq. ID No. 173, Seq. ID No. 183, Seq. ID No. 187, Seq. ID No. 189, Seq. ID No. 191, Seq. ID No. 195, Seq. ID No. 197, Seq. ID No. 203, Seq. ID No. 207, Seq. ID No. 215, Seq. ID No. 219, Seq. ID No. 223, Seq. ID No. 225, Seq. ID No. 227, Seq. ID No. 231, Seq. ID No. 233, Seq. ID No. 239, Seq. ID No. 241, Seq. ID No. 247, Seq. ID No. 253, Seq. ID No. 261, Seq. ID No. 265, Seq. ID No. 269, Seq. ID No. 273, Seq. ID No. 275, Seq. ID No. 277, Seq. ID No. 283, Seq. ID No. 291, Seq. ID No. 293, Seq. ID No. 297, Seq. ID No. 301, Seq. ID No. 307, Seq. ID No. 309, Seq. ID No. 313, Seq. ID No. 317, Seq. ID No. 321, Seq. ID

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In yet another preferred embodiment, the polynucleotide is selected from the *Alloiococcus otitidis* polynucleotides, which encode polypeptides, identified by GeneMark™ ORF finder program, and the polynucleotide is selected from one of Seq. ID No. 1, Seq. ID No. 3, Seq. ID No. 11, Seq. ID No. 13, Seq. ID No. 15, Seq. ID No. 17, Seq. ID No. 25, Seq. ID No. 27, Seq. ID No. 29, Seq. ID No. 35, Seq. ID No. 37, Seq. ID No. 39, Seq. ID No. 41, Seq. ID No. 43, Seq. ID No. 45, Seq. ID No. 49, Seq. ID No. 53, Seq. ID No. 57, Seq. ID No. 61, Seq. ID No. 69, Seq. ID No. 71, Seq. ID No. 75, Seq. ID No. 81, Seq. ID No. 83, Seq. ID No. 89, Seq. ID No. 95, Seq. ID No. 101, Seq. ID No. 111, Seq. ID No. 119, Seq. ID No. 125, Seq. ID No. 129, Seq. ID No. 135, Seq. ID No. 137, Seq. ID No. 141, Seq. ID No. 147, Seq. ID No. 151, Seq. ID No. 155, Seq. ID No. 167, Seq. ID No. 171, Seq. ID No. 181, Seq. ID No. 185, Seq. ID No. 187, Seq. ID No. 189, Seq. ID No. 191, Seq. ID No. 195, Seq. ID No. 199, Seq. ID No. 207, Seq. ID No. 213, Seq. ID No. 219, Seq. ID No. 221, Seq. ID No. 225, Seq. ID No. 227, Seq. ID No. 229, Seq. ID No. 233, Seq. ID No. 239, Seq. ID No. 241, Seq. ID No. 243, Seq. ID No. 253, Seq. ID No. 261, Seq. ID No. 263, Seq. ID No. 267, Seq. ID No. 273, Seq. ID No. 275, Seq. ID No. 277, Seq. ID No. 279, Seq. ID No. 291, Seq. ID No. 293, Seq. ID No. 295, Seq. ID No. 299, Seq. ID No. 303, Seq. ID No. 309, Seq. ID No. 311, Seq. ID No. 315, Seq. ID No. 319, Seq. ID No. 323, Seq. ID No. 331, Seq. ID No. 341, Seq. ID No. 345, Seq. ID No. 351, Seq. ID No. 355, Seq. ID No. 361, Seq. ID No. 363, Seq. ID No. 365, Seq. ID No. 375, Seq. ID No. 379, Seq. ID No. 381, Seq. ID No. 383, Seq. ID No.

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In another preferred embodiment, the invention comprises an isolated polynucleotide of the *Alloiococcus otitidis* genomic sequence encoding a polypeptide, which has been identified by the Applicants' assignee's ORF finder program that searches for an ATG, GTG or TTG Start codon between "Stop-Stop" region, and the polynucleotide is selected from one of Seq. ID No. 1, Seq. ID No. 5, Seq. ID No. 11, Seq. ID No. 13, Seq. ID No. 15, Seq. ID No. 17, Seq. ID No. 19, Seq. ID No. 21, Seq. ID No. 23, Seq. ID No. 27, Seq. ID No. 29, Seq. ID No. 31, Seq. ID No. 35, Seq. ID No. 37, Seq. ID No. 41, Seq. ID No. 43, Seq. ID No. 45, Seq. ID No. 47, Seq. ID No. 49, Seq. ID No. 51, Seq. ID No. 53, Seq. ID No. 55, Seq. ID No. 57, Seq. ID No. 59, Seq. ID No. 65, Seq. ID No. 67, Seq. ID No. 75, Seq. ID No. 77, Seq. ID No. 79, Seq. ID No. 81, Seq. ID No. 83, Seq. ID No. 89, Seq. ID No. 91, Seq. ID No. 93, Seq. ID No. 97, Seq. ID No. 99, Seq. ID No. 103, Seq. ID No. 105, Seq. ID No. 107, Seq. ID No. 109, Seq. ID No. 111, Seq. ID No. 113, Seq. ID No. 115, Seq. ID No. 117, Seq. ID No. 119, Seq. ID No. 121, Seq. ID No. 127, Seq. ID No. 129, Seq. ID No. 131, Seq. ID No. 133, Seq. ID No. 135, Seq. ID No. 137, Seq. ID No. 139, Seq. ID No. 143, Seq. ID No. 145, Seq. ID No. 147, Seq. ID No. 149, Seq. ID No. 153, Seq. ID No. 155, Seq. ID No. 157, Seq. ID No. 159, Seq. ID No. 161, Seq. ID No. 163, Seq. ID No. 165, Seq. ID No. 167, Seq. ID No. 169, Seq. ID No. 171, Seq. ID No. 175, Seq. ID No. 177, Seq. ID No. 179, Seq. ID No. 181, Seq. ID No. 183, Seq. ID No. 187, Seq. ID No. 191, Seq. ID No. 193, Seq. ID No. 195, Seq. ID No. 201, Seq. ID No. 205, Seq. ID No. 207, Seq. ID No. 215, Seq. ID No. 219, Seq. ID No. 221, Seq. ID No. 223, Seq. ID No. 225, Seq. ID No. 227, Seq. ID No. 231, Seq. ID

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In another preferred embodiment, the invention comprises an isolated polynucleotide of the *Alloiococcus otitidis* genomic sequence encoding a polypeptide, which has been identified by the Applicants' assignee's ORF finder program that searches for a transmembrane domain between two Stop codons and a Start codon immediately upstream of this transmembrane region, and the polynucleotide is selected from Seq. ID No. 7, Seq. ID No. 9, Seq. ID No. 33, Seq. ID No. 47, Seq. ID No. 67, Seq. ID No. 85, Seq. ID No. 87, Seq. ID No. 123, Seq. ID No. 133, Seq. ID No. 141, Seq. ID No. 159, Seq. ID No. 163, Seq. ID No. 191, Seq. ID No. 209, Seq. ID No. 211, Seq. ID No. 215, Seq. ID No. 217, Seq. ID No. 225, Seq. ID No. 235, Seq. ID No. 237, Seq. ID No. 249, Seq. ID No. 251, Seq. ID No. 255, Seq. ID No. 271, Seq. ID No. 277, Seq. ID No. 285, Seq. ID No. 287, Seq. ID No. 289, Seq. ID No. 327, Seq. ID No. 329, Seq. ID No. 373, Seq. ID No. 375, Seq. ID No. 419, Seq. ID No. 487, Seq. ID No. 497, Seq. ID No. 499, Seq. ID No. 503, Seq. ID No. 505, Seq. ID No. 509, Seq. ID No. 511, Seq. ID No. 515, Seq. ID No. 525, Seq. ID No. 527, Seq. ID No. 545, Seq. ID No. 567, Seq. ID No. 569, Seq. ID No. 575, Seq. ID No. 577, Seq. ID No. 579, Seq. ID No. 593, Seq. ID

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In one preferred embodiment, the invention comprises an isolated polynucleotide of an *Alloiococcus otitidis* genomic sequence, wherein the polynucleotide comprises a nucleotide sequence having at least about 70% identity to a nucleotide sequence contained within SEQ ID NO: 6651, a complement thereof, a degenerate variant thereof, and a fragment thereof.

In other preferred embodiments, the invention comprises an isolated polypeptide encoded by a polynucleotide and having at least about 70% identity to a nucleotide sequence chosen from one of the odd numbered sequence listings set out in SEQ ID NO: 1 through SEQ ID NO: 6649.

In certain aspects, the invention relates to *Alloiococcus otitidis* polypeptides. More particularly, the invention relates to *Alloiococcus otitidis* polypeptides, more preferably

antigenic polypeptides, encoded by *Alloiococcus otitidis* polynucleotide open reading frames. Thus, in certain embodiments, an isolated polypeptide is encoded by a polynucleotide comprising a nucleotide sequence having at least about 70% identity to a nucleotide sequence chosen from one of odd numbered sequences set out in SEQ ID NO: 1 through SEQ ID NO: 6649, a complement thereof, a degenerate variant thereof, or a fragment thereof. In a preferred embodiment, the isolated polypeptide encoded by one of the above polynucleotides comprises an amino acid sequence having at least about 70% identity to an amino acid sequence chosen from one of the even numbered sequences set out in SEQ ID NO: 2 through SEQ ID NO: 6650, a biological equivalent thereof, or a fragment thereof. In other embodiments, the polypeptide is a fusion polypeptide. In a preferred embodiment, the polypeptide immunoreacts with seropositive serum of an individual previously infected with *Alloiococcus otitidis*, a biological equivalent thereof, or a fragment thereof.

In other preferred embodiments, the isolated polypeptide encoded is selected from (a) an *Alloiococcus otitidis* polypeptide predicted by SignalP algorithm analysis as having met all four criteria set out in the SignalP algorithm for a polypeptide having a signal peptide and a subset of these are predicted by HMM SignalP algorithm analysis as having a signal peptide; (b) an *Alloiococcus otitidis* polypeptide predicted by SignalP algorithm analysis as having met three of the four criteria set out in the SignalP algorithm for a polypeptide having a signal peptide and a subset of these predicted by HMM SignalP algorithm analysis as having a signal peptide; (c) an *Alloiococcus otitidis* polypeptide predicted by HMM SignalP algorithm analysis as having a signal peptide; (d) an *Alloiococcus otitidis* polypeptide predicted by HMM SignalP algorithm analysis as being a non-secretory protein; (e) an *Alloiococcus otitidis* polypeptide identified by Pfam analysis; (f) an *Alloiococcus otitidis* polypeptide identified by BlastP analysis; (g) an *Alloiococcus otitidis* polypeptide identified using proteomics methodology as sharing homology with surface exposed proteins of *Streptococcus pneumoniae*; (h) an *Alloiococcus otitidis* polypeptide having a LPXTG motif, wherein the polypeptide is covalently attached to the peptidoglycan layer; (i) an *Alloiococcus otitidis* lipoprotein; (j) an *Alloiococcus otitidis* polypeptide non-covalently associated with the peptidoglycan layer; (k) an *Alloiococcus otitidis* polypeptide having an RGD motif wherein X is not a proline residue; (l) an *Alloiococcus otitidis* polypeptide predicted by BlastP as being involved in capsule biosynthesis and transport; (m) an *Alloiococcus otitidis* polypeptide

identified by BlastP as being localized within the capsule loci of the *Alloiococcus otitidis* genome; (n) an *Alloiococcus otitidis* polypeptide predicted by BlastP as being associated with sporulation; (o) an *Alloiococcus otitidis* polypeptide encoded by unique ORFs identified by BlastP analysis as having a BlastP 'E Value' of $> e^{-10}$; (p) an *Alloiococcus*
 5 *otitidis* polypeptide identified by Glimmer™ ORF finder program; (q) an *Alloiococcus*
otitidis polypeptide identified by GeneMark™ ORF finder program; (r) an *Alloiococcus*
otitidis polypeptide identified by Applicants' assignee's ORF finder program that searches for an ATG, GTG or TTG Start codon between a Stop-Stop region; and (s) an
 10 *Alloiococcus otitidis* polypeptide identified by Applicants' assignee's ORF finder program that searches for a transmembrane domain between two Stop codons and a Start codon immediately upstream of this transmembrane region.

In a preferred embodiment, the polypeptide is selected from the *Alloiococcus otitidis* polypeptides predicted by SignalP algorithm analysis as having met all four criteria set out in the SignalP algorithm for a polypeptide having a signal peptide and is
 15 selected from one of Seq. ID No. 90, Seq. ID No. 128, Seq. ID No. 132, Seq. ID No. 134, Seq. ID No. 162, Seq. ID No. 164, Seq. ID No. 214, Seq. ID No. 216, Seq. ID No. 226, Seq. ID No. 250, Seq. ID No. 252, Seq. ID No. 288, Seq. ID No. 290, Seq. ID No. 370, Seq. ID No. 372, Seq. ID No. 376, Seq. ID No. 378, Seq. ID No. 498, Seq. ID No. 504, Seq. ID No. 506, Seq. ID No. 528, Seq. ID No. 550, Seq. ID No. 576, Seq. ID No. 618,
 20 Seq. ID No. 658, Seq. ID No. 660, Seq. ID No. 662, Seq. ID No. 676, Seq. ID No. 716, Seq. ID No. 718, Seq. ID No. 746, Seq. ID No. 748, Seq. ID No. 756, Seq. ID No. 758, Seq. ID No. 760, Seq. ID No. 762, Seq. ID No. 774, Seq. ID No. 808, Seq. ID No. 968, Seq. ID No. 974, Seq. ID No. 976, Seq. ID No. 1014, Seq. ID No. 1026, Seq. ID No. 1028, Seq. ID No. 1040, Seq. ID No. 1076, Seq. ID No. 1090, Seq. ID No. 1196, Seq. ID
 25 No. 1198, Seq. ID No. 1208, Seq. ID No. 1240, Seq. ID No. 1244, Seq. ID No. 1246, Seq. ID No. 1270, Seq. ID No. 1316, Seq. ID No. 1318, Seq. ID No. 1332, Seq. ID No. 1366, Seq. ID No. 1368, Seq. ID No. 1370, Seq. ID No. 1446, Seq. ID No. 1448, Seq. ID No. 1514, Seq. ID No. 1518, Seq. ID No. 1546, Seq. ID No. 1550, Seq. ID No. 1562, Seq. ID No. 1570, Seq. ID No. 1572, Seq. ID No. 1586, Seq. ID No. 1644, Seq. ID No.
 30 1654, Seq. ID No. 1662, Seq. ID No. 1664, Seq. ID No. 1708, Seq. ID No. 1734, Seq. ID No. 1738, Seq. ID No. 1756, Seq. ID No. 1766, Seq. ID No. 1768, Seq. ID No. 1776, Seq. ID No. 1792, Seq. ID No. 1806, Seq. ID No. 1876, Seq. ID No. 1970, Seq. ID No. 1982, Seq. ID No. 2054, Seq. ID No. 2056, Seq. ID No. 2088, Seq. ID No. 2090, Seq. ID

No. 2092, Seq. ID No. 2106, Seq. ID No. 2116, Seq. ID No. 2150, Seq. ID No. 2152, Seq. ID No. 2160, Seq. ID No. 2178, Seq. ID No. 2278, Seq. ID No. 2294, Seq. ID No. 2322, Seq. ID No. 2348, Seq. ID No. 2352, Seq. ID No. 2354, Seq. ID No. 2366, Seq. ID No. 2396, Seq. ID No. 2422, Seq. ID No. 2426, Seq. ID No. 2428, Seq. ID No. 2430, Seq. ID No. 2450, Seq. ID No. 2460, Seq. ID No. 2526, Seq. ID No. 2532, Seq. ID No. 2608, Seq. ID No. 2652, Seq. ID No. 2680, Seq. ID No. 2694, Seq. ID No. 2700, Seq. ID No. 2704, Seq. ID No. 2754, Seq. ID No. 2786, Seq. ID No. 2814, Seq. ID No. 2830, Seq. ID No. 2836, Seq. ID No. 2842, Seq. ID No. 2880, Seq. ID No. 2882, Seq. ID No. 2936, Seq. ID No. 2938, Seq. ID No. 2950, Seq. ID No. 2966, Seq. ID No. 2968, Seq. ID No. 2974, Seq. ID No. 3008, Seq. ID No. 3010, Seq. ID No. 3012, Seq. ID No. 3030, Seq. ID No. 3032, Seq. ID No. 3110, Seq. ID No. 3112, Seq. ID No. 3220, Seq. ID No. 3224, Seq. ID No. 3274, Seq. ID No. 3298, Seq. ID No. 3332, Seq. ID No. 3336, Seq. ID No. 3342, Seq. ID No. 3350, Seq. ID No. 3354, Seq. ID No. 3356, Seq. ID No. 3378, Seq. ID No. 3392, Seq. ID No. 3426, Seq. ID No. 3450, Seq. ID No. 3494, Seq. ID No. 3574, Seq. ID No. 3612, Seq. ID No. 3620, Seq. ID No. 3690, Seq. ID No. 3754, Seq. ID No. 3756, Seq. ID No. 3766, Seq. ID No. 3782, Seq. ID No. 3784, Seq. ID No. 3852, Seq. ID No. 3904, Seq. ID No. 4006, Seq. ID No. 4008, Seq. ID No. 4028, Seq. ID No. 4074, Seq. ID No. 4138, Seq. ID No. 4142, Seq. ID No. 4144, Seq. ID No. 4146, Seq. ID No. 4226, Seq. ID No. 4344, Seq. ID No. 4386, Seq. ID No. 4400, Seq. ID No. 4470, Seq. ID No. 4484, Seq. ID No. 4494, Seq. ID No. 4496, Seq. ID No. 4534, Seq. ID No. 4700, Seq. ID No. 4710, Seq. ID No. 4712, Seq. ID No. 4736, Seq. ID No. 4828, Seq. ID No. 4872, Seq. ID No. 4874, Seq. ID No. 4880, Seq. ID No. 4922, Seq. ID No. 4982, Seq. ID No. 5116, Seq. ID No. 5268, Seq. ID No. 5342, Seq. ID No. 5388, Seq. ID No. 5466, Seq. ID No. 5468, Seq. ID No. 5480, Seq. ID No. 5498, Seq. ID No. 5514, Seq. ID No. 5544, Seq. ID No. 5546, Seq. ID No. 5568, Seq. ID No. 5588, Seq. ID No. 5590, Seq. ID No. 5592, Seq. ID No. 5612, Seq. ID No. 5622, Seq. ID No. 5642, Seq. ID No. 5682, Seq. ID No. 5720, Seq. ID No. 5772, Seq. ID No. 5784, Seq. ID No. 5896, Seq. ID No. 5900, Seq. ID No. 5902, Seq. ID No. 5928, Seq. ID No. 5930, Seq. ID No. 5940, Seq. ID No. 5988, Seq. ID No. 6014, Seq. ID No. 6088, Seq. ID No. 6090, Seq. ID No. 6092, Seq. ID No. 6094, Seq. ID No. 6096, Seq. ID No. 6104, Seq. ID No. 6170, Seq. ID No. 6186, Seq. ID No. 6188, Seq. ID No. 6196, Seq. ID No. 6198, Seq. ID No. 6204, Seq. ID No. 6206, Seq. ID No. 6222, Seq. ID No. 6224, Seq. ID No. 6230, Seq. ID No. 6292, Seq. ID No. 6416, Seq. ID No. 6418, Seq. ID No. 6474, Seq. ID No. 6508, Seq. ID

No. 6544, Seq. ID No. 6596, Seq. ID No. 6598, Seq. ID No. 6600, Seq. ID No. 6602, and Seq. ID No. 6604.

In another preferred embodiment, the polypeptide is selected from *Alloiococcus otitidis* polypeptides predicted by SignalP algorithm analysis as having met three of the four criteria set out in the SignalP algorithm for a polypeptide having a signal peptide and predicted by HMM SignalP algorithm analysis as having a signal peptide and is selected from one of Seq. ID No. 8, Seq. ID No. 12, Seq. ID No. 24, Seq. ID No. 46, Seq. ID No. 48, Seq. ID No. 54, Seq. ID No. 60, Seq. ID No. 66, Seq. ID No. 68, Seq. ID No. 88, Seq. ID No. 92, Seq. ID No. 140, Seq. ID No. 152, Seq. ID No. 160, Seq. ID No. 166, Seq. ID No. 170, Seq. ID No. 186, Seq. ID No. 212, Seq. ID No. 218, Seq. ID No. 236, Seq. ID No. 238, Seq. ID No. 240, Seq. ID No. 272, Seq. ID No. 286, Seq. ID No. 292, Seq. ID No. 328, Seq. ID No. 350, Seq. ID No. 386, Seq. ID No. 388, Seq. ID No. 408, Seq. ID No. 428, Seq. ID No. 432, Seq. ID No. 456, Seq. ID No. 458, Seq. ID No. 496, Seq. ID No. 500, Seq. ID No. 512, Seq. ID No. 514, Seq. ID No. 516, Seq. ID No. 526, Seq. ID No. 546, Seq. ID No. 548, Seq. ID No. 558, Seq. ID No. 570, Seq. ID No. 590, Seq. ID No. 592, Seq. ID No. 594, Seq. ID No. 596, Seq. ID No. 610, Seq. ID No. 638, Seq. ID No. 640, Seq. ID No. 642, Seq. ID No. 654, Seq. ID No. 670, Seq. ID No. 680, Seq. ID No. 720, Seq. ID No. 724, Seq. ID No. 740, Seq. ID No. 750, Seq. ID No. 752, Seq. ID No. 764, Seq. ID No. 766, Seq. ID No. 770, Seq. ID No. 778, Seq. ID No. 780, Seq. ID No. 782, Seq. ID No. 820, Seq. ID No. 896, Seq. ID No. 904, Seq. ID No. 906, Seq. ID No. 910, Seq. ID No. 936, Seq. ID No. 938, Seq. ID No. 952, Seq. ID No. 956, Seq. ID No. 980, Seq. ID No. 982, Seq. ID No. 984, Seq. ID No. 986, Seq. ID No. 1006, Seq. ID No. 1008, Seq. ID No. 1010, Seq. ID No. 1016, Seq. ID No. 1020, Seq. ID No. 1030, Seq. ID No. 1032, Seq. ID No. 1048, Seq. ID No. 1092, Seq. ID No. 1112, Seq. ID No. 1138, Seq. ID No. 1152, Seq. ID No. 1154, Seq. ID No. 1170, Seq. ID No. 1174, Seq. ID No. 1184, Seq. ID No. 1192, Seq. ID No. 1194, Seq. ID No. 1214, Seq. ID No. 1224, Seq. ID No. 1230, Seq. ID No. 1248, Seq. ID No. 1260, Seq. ID No. 1284, Seq. ID No. 1308, Seq. ID No. 1320, Seq. ID No. 1322, Seq. ID No. 1328, Seq. ID No. 1342, Seq. ID No. 1344, Seq. ID No. 1348, Seq. ID No. 1390, Seq. ID No. 1402, Seq. ID No. 1430, Seq. ID No. 1480, Seq. ID No. 1552, Seq. ID No. 1560, Seq. ID No. 1580, Seq. ID No. 1588, Seq. ID No. 1622, Seq. ID No. 1628, Seq. ID No. 1634, Seq. ID No. 1646, Seq. ID No. 1648, Seq. ID No. 1650, Seq. ID No. 1656, Seq. ID No. 1666, Seq. ID No. 1668, Seq. ID No. 1672, Seq. ID No. 1678, Seq. ID No. 1680, Seq. ID No. 1682, Seq. ID No.

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In yet another preferred embodiment, the polypeptide is selected from the *Alloiococcus otitidis* polypeptides, which are predicted by HMM SignalP algorithm analysis as having a signal peptide and is selected from one of Seq. ID No. 4, Seq. ID No. 8, Seq. ID No. 10, Seq. ID No. 20, Seq. ID No. 22, Seq. ID No. 32, Seq. ID No. 34, Seq. ID No. 46, Seq. ID No. 48, Seq. ID No. 50, Seq. ID No. 54, Seq. ID No. 66, Seq. ID No. 68, Seq. ID No. 86, Seq. ID No. 88, Seq. ID No. 106, Seq. ID No. 112, Seq. ID No. 124, Seq. ID No. 132, Seq. ID No. 134, Seq. ID No. 142, Seq. ID No. 160, Seq. ID No. 162, Seq. ID No. 164, Seq. ID No. 172, Seq. ID No. 192, Seq. ID No. 210, Seq. ID No. 212, Seq. ID No. 214, Seq. ID No. 216, Seq. ID No. 218, Seq. ID No. 226, Seq. ID No. 236, Seq. ID No. 238, Seq. ID No. 250, Seq. ID No. 252, Seq. ID No. 256, Seq. ID No. 258, Seq. ID No. 260, Seq. ID No. 272, Seq. ID No. 274, Seq. ID No. 278, Seq. ID No. 286, Seq. ID No. 288, Seq. ID No. 290, Seq. ID No. 328, Seq. ID No. 330, Seq. ID No. 358, Seq. ID No. 360, Seq. ID No. 374, Seq. ID No. 376, Seq. ID No. 394, Seq. ID No. 402, Seq. ID No. 404, Seq. ID No. 456, Seq. ID No. 458, Seq. ID No. 478, Seq. ID No.

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In yet another embodiment, the *Alloiococcus otitidis* polypeptide is one that is predicted by HMM SignalP algorithm analysis as being a non-secretory protein, and is selected from one of Seq. ID No. 2, Seq. ID No. 6, Seq. ID No. 12, Seq. ID No. 14, Seq. ID No. 16, Seq. ID No. 18, Seq. ID No. 24, Seq. ID No. 26, Seq. ID No. 28, Seq. ID No. 30, Seq. ID No. 36, Seq. ID No. 38, Seq. ID No. 40, Seq. ID No. 42, Seq. ID No. 44, Seq. ID No. 52, Seq. ID No. 56, Seq. ID No. 58, Seq. ID No. 60, Seq. ID No. 62, Seq. ID No. 64, Seq. ID No. 70, Seq. ID No. 72, Seq. ID No. 74, Seq. ID No. 76, Seq. ID No. 78, Seq. ID No. 80, Seq. ID No. 82, Seq. ID No. 84, Seq. ID No. 90, Seq. ID No. 92, Seq. ID No. 94, Seq. ID No. 96, Seq. ID No. 98, Seq. ID No. 100, Seq. ID No. 102, Seq. ID No. 104, Seq. ID No. 108, Seq. ID No. 110, Seq. ID No. 114, Seq. ID No. 116, Seq. ID No. 118,

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5 In another preferred embodiment, the polypeptide is selected from the *Alloiococcus otitidis* polypeptides identified by BlastP analysis and is selected from one of Seq. ID No. 10, Seq. ID No. 18, Seq. ID No. 46, Seq. ID No. 50, Seq. ID No. 54, Seq. ID No. 60, Seq. ID No. 90, Seq. ID No. 146, Seq. ID No. 158, Seq. ID No. 168, Seq. ID No. 172, Seq. ID No. 192, Seq. ID No. 216, Seq. ID No. 218, Seq. ID No. 226, Seq. ID No. 240, Seq. ID No. 254, Seq. ID No. 274, Seq. ID No. 278, Seq. ID No. 290, Seq. ID No. 330, Seq. ID No. 344, Seq. ID No. 346, Seq. ID No. 376, Seq. ID No. 502, Seq. ID No. 506, Seq. ID No. 512, Seq. ID No. 516, Seq. ID No. 530, Seq. ID No. 570, Seq. ID No. 576, Seq. ID No. 594, Seq. ID No. 596, Seq. ID No. 638, Seq. ID No. 660, Seq. ID No. 670, Seq. ID No. 676, Seq. ID No. 682, Seq. ID No. 730, Seq. ID No. 780, Seq. ID No. 820, Seq. ID No. 896, Seq. ID No. 922, Seq. ID No. 936, Seq. ID No. 956, Seq. ID No. 968, Seq. ID No. 986, Seq. ID No. 1018, Seq. ID No. 1040, Seq. ID No. 1076, Seq. ID No. 1090, Seq. ID No. 1138, Seq. ID No. 1224, Seq. ID No. 1242, Seq. ID No. 1316, Seq. ID No. 1332, Seq. ID No. 1370, Seq. ID No. 1460, Seq. ID No. 1518, Seq. ID No. 1562, Seq. ID No. 1564, Seq. ID No. 1568, Seq. ID No. 1572, Seq. ID No. 1574, Seq. ID No. 1602, Seq. ID No. 1608, Seq. ID No. 1614, Seq. ID No. 1620, Seq. ID No. 1642, Seq. ID No. 1648, Seq. ID No. 1654, Seq. ID No. 1658, Seq. ID No. 1666, Seq. ID No. 1700, Seq. ID No. 1714, Seq. ID No. 1752, Seq. ID No. 1772, Seq. ID No. 1786, Seq. ID No. 1790, Seq. ID No. 1792, Seq. ID No. 1798, Seq. ID No. 1812, Seq. ID No. 1818, Seq. ID No. 1820, Seq. ID No. 1822, Seq. ID No. 1872, Seq. ID No. 1896, Seq. ID No. 1906, Seq. ID No. 1914, Seq. ID No. 1920, Seq. ID No. 1924, Seq. ID No. 1966, Seq. ID No. 1972, Seq. ID No. 2000, Seq. ID No. 2048, Seq. ID No. 2056, Seq. ID No. 2092, Seq. ID No. 2094, Seq. ID No. 2116, Seq. ID No. 2120, Seq. ID No. 2128, Seq. ID No. 2166, Seq. ID No. 2180, Seq. ID No. 2208, Seq. ID No. 2224, Seq. ID No. 2228, Seq. ID No. 2242, Seq. ID No. 2254, Seq. ID No. 2264, Seq. ID No. 2270, Seq. ID No. 2276, Seq. ID No. 2302, Seq. ID No. 2316, Seq. ID No. 2330, Seq. ID No. 2334, Seq. ID No. 2344, Seq. ID No. 2346, Seq. ID No. 2364, Seq. ID No. 2374, Seq. ID No. 2392, Seq. ID No. 2418, Seq. ID No. 2430, Seq. ID No. 2466, Seq. ID No. 2476, Seq. ID No. 2484, Seq. ID No. 2514, Seq. ID No. 2526, Seq. ID No. 2590, Seq. ID No. 2614, Seq. ID No.

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5734, Seq. ID No. 5762, Seq. ID No. 5792, Seq. ID No. 5896, Seq. ID No. 5902, Seq. ID No. 5904, Seq. ID No. 5910, Seq. ID No. 5914, Seq. ID No. 5920, Seq. ID No. 5930, Seq. ID No. 5940, Seq. ID No. 6002, Seq. ID No. 6044, Seq. ID No. 6054, Seq. ID No. 6058, Seq. ID No. 6090, Seq. ID No. 6096, Seq. ID No. 6104, Seq. ID No. 6112, Seq. ID No. 6118, Seq. ID No. 6166, Seq. ID No. 6170, Seq. ID No. 6186, Seq. ID No. 6192, Seq. ID No. 6210, Seq. ID No. 6230, Seq. ID No. 6258, Seq. ID No. 6264, Seq. ID No. 6272, Seq. ID No. 6276, Seq. ID No. 6290, Seq. ID No. 6304, Seq. ID No. 6366, Seq. ID No. 6370, Seq. ID No. 6384, and Seq. ID No. 6416.

In another preferred embodiment, the polypeptide is selected from the *Alloiococcus otitidis* polypeptides, which have been identified by Pfam analysis, and is selected from one of Seq. ID No. 90, Seq. ID No. 146, Seq. ID No. 156, Seq. ID No. 168, Seq. ID No. 174, Seq. ID No. 192, Seq. ID No. 216, Seq. ID No. 220, Seq. ID No. 222, Seq. ID No. 224, Seq. ID No. 226, Seq. ID No. 234, Seq. ID No. 240, Seq. ID No. 252, Seq. ID No. 254, Seq. ID No. 272, Seq. ID No. 292, Seq. ID No. 332, Seq. ID No. 342, Seq. ID No. 346, Seq. ID No. 376, Seq. ID No. 502, Seq. ID No. 506, Seq. ID No. 512, Seq. ID No. 530, Seq. ID No. 568, Seq. ID No. 570, Seq. ID No. 576, Seq. ID No. 594, Seq. ID No. 596, Seq. ID No. 602, Seq. ID No. 638, Seq. ID No. 650, Seq. ID No. 662, Seq. ID No. 670, Seq. ID No. 676, Seq. ID No. 682, Seq. ID No. 684, Seq. ID No. 730, Seq. ID No. 754, Seq. ID No. 780, Seq. ID No. 828, Seq. ID No. 840, Seq. ID No. 896, Seq. ID No. 940, Seq. ID No. 970, Seq. ID No. 986, Seq. ID No. 1016, Seq. ID No. 1040, Seq. ID No. 1076, Seq. ID No. 1138, Seq. ID No. 1156, Seq. ID No. 1164, Seq. ID No. 1176, Seq. ID No. 1224, Seq. ID No. 1232, Seq. ID No. 1238, Seq. ID No. 1242, Seq. ID No. 1262, Seq. ID No. 1332, Seq. ID No. 1340, Seq. ID No. 1370, Seq. ID No. 1478, Seq. ID No. 1518, Seq. ID No. 1532, Seq. ID No. 1540, Seq. ID No. 1550, Seq. ID No. 1564, Seq. ID No. 1568, Seq. ID No. 1572, Seq. ID No. 1574, Seq. ID No. 1590, Seq. ID No. 1596, Seq. ID No. 1648, Seq. ID No. 1658, Seq. ID No. 1772, Seq. ID No. 1786, Seq. ID No. 1790, Seq. ID No. 1820, Seq. ID No. 1822, Seq. ID No. 1970, Seq. ID No. 2016, Seq. ID No. 2048, Seq. ID No. 2088, Seq. ID No. 2090, Seq. ID No. 2094, Seq. ID No. 2116, Seq. ID No. 2118, Seq. ID No. 2128, Seq. ID No. 2142, Seq. ID No. 2180, Seq. ID No. 2208, Seq. ID No. 2224, Seq. ID No. 2254, Seq. ID No. 2276, Seq. ID No. 2302, Seq. ID No. 2316, Seq. ID No. 2330, Seq. ID No. 2344, Seq. ID No. 2350, Seq. ID No. 2364, Seq. ID No. 2382, Seq. ID No. 2392, Seq. ID No. 2418, Seq. ID No. 2422, Seq. ID No. 2424, Seq. ID No. 2430, Seq. ID No. 2482, Seq. ID No. 2488, Seq. ID No.

2490, Seq. ID No. 2492, Seq. ID No. 2510, Seq. ID No. 2520, Seq. ID No. 2526, Seq. ID
No. 2548, Seq. ID No. 2554, Seq. ID No. 2564, Seq. ID No. 2588, Seq. ID No. 2600,
Seq. ID No. 2608, Seq. ID No. 2614, Seq. ID No. 2652, Seq. ID No. 2676, Seq. ID No.
2682, Seq. ID No. 2688, Seq. ID No. 2694, Seq. ID No. 2700, Seq. ID No. 2704, Seq. ID
5 No. 2710, Seq. ID No. 2712, Seq. ID No. 2728, Seq. ID No. 2754, Seq. ID No. 2820,
Seq. ID No. 2822, Seq. ID No. 2824, Seq. ID No. 2868, Seq. ID No. 2872, Seq. ID No.
2908, Seq. ID No. 2920, Seq. ID No. 2958, Seq. ID No. 2972, Seq. ID No. 2980, Seq. ID
No. 3000, Seq. ID No. 3006, Seq. ID No. 3020, Seq. ID No. 3036, Seq. ID No. 3066,
Seq. ID No. 3086, Seq. ID No. 3150, Seq. ID No. 3166, Seq. ID No. 3184, Seq. ID No.
10 3204, Seq. ID No. 3212, Seq. ID No. 3252, Seq. ID No. 3260, Seq. ID No. 3320, Seq. ID
No. 3324, Seq. ID No. 3336, Seq. ID No. 3338, Seq. ID No. 3348, Seq. ID No. 3360,
Seq. ID No. 3378, Seq. ID No. 3380, Seq. ID No. 3400, Seq. ID No. 3426, Seq. ID No.
3484, Seq. ID No. 3496, Seq. ID No. 3498, Seq. ID No. 3520, Seq. ID No. 3530, Seq. ID
No. 3600, Seq. ID No. 3612, Seq. ID No. 3616, Seq. ID No. 3620, Seq. ID No. 3664,
15 Seq. ID No. 3740, Seq. ID No. 3760, Seq. ID No. 3772, Seq. ID No. 3798, Seq. ID No.
3826, Seq. ID No. 3842, Seq. ID No. 3856, Seq. ID No. 3864, Seq. ID No. 3902, Seq. ID
No. 3930, Seq. ID No. 4016, Seq. ID No. 4018, Seq. ID No. 4056, Seq. ID No. 4076,
Seq. ID No. 4086, Seq. ID No. 4090, Seq. ID No. 4100, Seq. ID No. 4106, Seq. ID No.
4130, Seq. ID No. 4204, Seq. ID No. 4244, Seq. ID No. 4252, Seq. ID No. 4344, Seq. ID
20 No. 4384, Seq. ID No. 4476, Seq. ID No. 4482, Seq. ID No. 4488, Seq. ID No. 4492,
Seq. ID No. 4534, Seq. ID No. 4628, Seq. ID No. 4706, Seq. ID No. 4714, Seq. ID No.
4718, Seq. ID No. 4720, Seq. ID No. 4730, Seq. ID No. 4790, Seq. ID No. 4792, Seq. ID
No. 4794, Seq. ID No. 4804, Seq. ID No. 4814, Seq. ID No. 4816, Seq. ID No. 4826,
Seq. ID No. 4834, Seq. ID No. 4838, Seq. ID No. 4876, Seq. ID No. 4880, Seq. ID No.
25 4920, Seq. ID No. 4932, Seq. ID No. 4948, Seq. ID No. 4986, Seq. ID No. 5078, Seq. ID
No. 5116, Seq. ID No. 5118, Seq. ID No. 5128, Seq. ID No. 5142, Seq. ID No. 5194,
Seq. ID No. 5216, Seq. ID No. 5220, Seq. ID No. 5276, Seq. ID No. 5382, Seq. ID No.
5390, Seq. ID No. 5410, Seq. ID No. 5412, Seq. ID No. 5476, Seq. ID No. 5492, Seq. ID
No. 5514, Seq. ID No. 5520, Seq. ID No. 5526, Seq. ID No. 5530, Seq. ID No. 5538,
30 Seq. ID No. 5558, Seq. ID No. 5582, Seq. ID No. 5600, Seq. ID No. 5638, Seq. ID No.
5686, Seq. ID No. 5724, Seq. ID No. 5756, Seq. ID No. 5762, Seq. ID No. 5896, Seq. ID
No. 5902, Seq. ID No. 5904, Seq. ID No. 5912, Seq. ID No. 5914, Seq. ID No. 5920,
Seq. ID No. 5924, Seq. ID No. 5930, Seq. ID No. 6002, Seq. ID No. 6044, Seq. ID No.

6054, Seq. ID No. 6056, Seq. ID No. 6090, Seq. ID No. 6096, Seq. ID No. 6112, Seq. ID No. 6118, Seq. ID No. 6166, Seq. ID No. 6170, Seq. ID No. 6188, Seq. ID No. 6196, Seq. ID No. 6220, Seq. ID No. 6234, Seq. ID No. 6270, Seq. ID No. 6276, Seq. ID No. 6280, Seq. ID No. 6288, Seq. ID No. 6298, Seq. ID No. 6300, Seq. ID No. 6306, Seq. ID No. 6312, Seq. ID No. 6370, Seq. ID No. 6380, Seq. ID No. 6588, and Seq. ID No. 6592.

In yet another preferred embodiment, the polypeptide is selected from the *Alloiococcus otitidis* polypeptides, wherein the polypeptide is identified using proteomics methodology as sharing homology with surface exposed proteins in *Streptococcus pneumoniae*, and is selected from one of Seq. ID No. 2, Seq. ID No. 6, Seq. ID No. 94, Seq. ID No. 96, Seq. ID No. 104, Seq. ID No. 108, Seq. ID No. 158, Seq. ID No. 224, Seq. ID No. 226, Seq. ID No. 234, Seq. ID No. 240, Seq. ID No. 254, Seq. ID No. 318, Seq. ID No. 322, Seq. ID No. 342, Seq. ID No. 346, Seq. ID No. 354, Seq. ID No. 362, Seq. ID No. 364, Seq. ID No. 366, Seq. ID No. 376, Seq. ID No. 380, Seq. ID No. 384, Seq. ID No. 390, Seq. ID No. 392, Seq. ID No. 398, Seq. ID No. 406, Seq. ID No. 410, Seq. ID No. 416, Seq. ID No. 424, Seq. ID No. 426, Seq. ID No. 428, Seq. ID No. 430, Seq. ID No. 436, Seq. ID No. 438, Seq. ID No. 440, Seq. ID No. 442, Seq. ID No. 444, Seq. ID No. 446, Seq. ID No. 448, Seq. ID No. 450, Seq. ID No. 462, Seq. ID No. 464, Seq. ID No. 466, Seq. ID No. 514, Seq. ID No. 544, Seq. ID No. 552, Seq. ID No. 554, Seq. ID No. 560, Seq. ID No. 596, Seq. ID No. 602, Seq. ID No. 638, Seq. ID No. 650, Seq. ID No. 658, Seq. ID No. 670, Seq. ID No. 676, Seq. ID No. 684, Seq. ID No. 754, Seq. ID No. 930, Seq. ID No. 970, Seq. ID No. 1042, Seq. ID No. 1044, Seq. ID No. 1086, Seq. ID No. 1090, Seq. ID No. 1094, Seq. ID No. 1098, Seq. ID No. 1100, Seq. ID No. 1102, Seq. ID No. 1176, Seq. ID No. 1206, Seq. ID No. 1238, Seq. ID No. 1460, Seq. ID No. 1496, Seq. ID No. 1498, Seq. ID No. 1504, Seq. ID No. 1518, Seq. ID No. 1528, Seq. ID No. 1532, Seq. ID No. 1540, Seq. ID No. 1544, Seq. ID No. 1550, Seq. ID No. 1574, Seq. ID No. 1658, Seq. ID No. 1710, Seq. ID No. 1768, Seq. ID No. 1786, Seq. ID No. 1822, Seq. ID No. 1890, Seq. ID No. 1926, Seq. ID No. 1970, Seq. ID No. 2004, Seq. ID No. 2048, Seq. ID No. 2076, Seq. ID No. 2090, Seq. ID No. 2094, Seq. ID No. 2118, Seq. ID No. 2138, Seq. ID No. 2144, Seq. ID No. 2206, Seq. ID No. 2236, Seq. ID No. 2258, Seq. ID No. 2302, Seq. ID No. 2364, Seq. ID No. 2424, Seq. ID No. 2446, Seq. ID No. 2452, Seq. ID No. 2482, Seq. ID No. 2496, Seq. ID No. 2506, Seq. ID No. 2578, Seq. ID No. 2588, Seq. ID No. 2614, Seq. ID No. 2634, Seq. ID No. 2652, Seq. ID No. 2666, Seq. ID No. 2670, Seq. ID No. 2678, Seq. ID No. 2688, Seq. ID No.

2694, Seq. ID No. 2700, Seq. ID No. 2712, Seq. ID No. 2716, Seq. ID No. 2758, Seq. ID No. 2792, Seq. ID No. 2794, Seq. ID No. 2804, Seq. ID No. 2868, Seq. ID No. 2920, Seq. ID No. 2930, Seq. ID No. 3006, Seq. ID No. 3020, Seq. ID No. 3126, Seq. ID No. 3138, Seq. ID No. 3162, Seq. ID No. 3180, Seq. ID No. 3252, Seq. ID No. 3260, Seq. ID No. 3286, Seq. ID No. 3310, Seq. ID No. 3318, Seq. ID No. 3338, Seq. ID No. 3346, Seq. ID No. 3360, Seq. ID No. 3476, Seq. ID No. 3516, Seq. ID No. 3522, Seq. ID No. 3642, Seq. ID No. 3696, Seq. ID No. 3794, Seq. ID No. 3902, Seq. ID No. 3928, Seq. ID No. 3988, Seq. ID No. 4002, Seq. ID No. 4058, Seq. ID No. 4082, Seq. ID No. 4112, Seq. ID No. 4126, Seq. ID No. 4194, Seq. ID No. 4196, Seq. ID No. 4238, Seq. ID No. 4248, Seq. ID No. 4384, Seq. ID No. 4394, Seq. ID No. 4398, Seq. ID No. 4402, Seq. ID No. 4436, Seq. ID No. 4450, Seq. ID No. 4472, Seq. ID No. 4492, Seq. ID No. 4512, Seq. ID No. 4520, Seq. ID No. 4532, Seq. ID No. 4550, Seq. ID No. 4578, Seq. ID No. 4582, Seq. ID No. 4586, Seq. ID No. 4610, Seq. ID No. 4612, Seq. ID No. 4614, Seq. ID No. 4676, Seq. ID No. 4686, Seq. ID No. 4720, Seq. ID No. 4730, Seq. ID No. 4744, Seq. ID No. 4756, Seq. ID No. 4782, Seq. ID No. 4788, Seq. ID No. 4838, Seq. ID No. 4842, Seq. ID No. 4850, Seq. ID No. 4856, Seq. ID No. 4890, Seq. ID No. 4902, Seq. ID No. 4916, Seq. ID No. 4918, Seq. ID No. 4932, Seq. ID No. 4936, Seq. ID No. 4978, Seq. ID No. 5026, Seq. ID No. 5030, Seq. ID No. 5110, Seq. ID No. 5116, Seq. ID No. 5118, Seq. ID No. 5156, Seq. ID No. 5186, Seq. ID No. 5202, Seq. ID No. 5204, Seq. ID No. 5220, Seq. ID No. 5262, Seq. ID No. 5290, Seq. ID No. 5296, Seq. ID No. 5378, Seq. ID No. 5390, Seq. ID No. 5400, Seq. ID No. 5412, Seq. ID No. 5538, Seq. ID No. 5622, Seq. ID No. 5628, Seq. ID No. 5658, Seq. ID No. 5676, Seq. ID No. 5718, Seq. ID No. 5778, Seq. ID No. 5860, Seq. ID No. 5902, Seq. ID No. 5914, Seq. ID No. 5920, Seq. ID No. 5926, Seq. ID No. 5934, Seq. ID No. 6056, Seq. ID No. 6130, Seq. ID No. 6134, Seq. ID No. 6188, Seq. ID No. 6194, Seq. ID No. 6220, Seq. ID No. 6272, Seq. ID No. 6278, Seq. ID No. 6370, Seq. ID No. 6376, Seq. ID No. 6380, Seq. ID No. 6390, Seq. ID No. 6592, and Seq. ID No. 6606.

In yet another preferred embodiment, the polypeptide is selected from the *Alloiococcus otitidis* polypeptides identified as having an LPXTG motif, which are covalently attached to the peptidoglycan layer, and is selected from one of Seq. ID No. 504, Seq. ID No. 506, Seq. ID No. 1316, Seq. ID No. 1318, Seq. ID No. 1364, Seq. ID No. 1366, Seq. ID No. 1368, Seq. ID No. 1370, Seq. ID No. 1560, Seq. ID No. 1562, Seq. ID No. 1582, Seq. ID No. 1740, Seq. ID No. 1742, Seq. ID No. 2812, Seq. ID No.

2814, Seq. ID No. 3620, Seq. ID No. 5588, Seq. ID No. 5590, Seq. ID No. 5592, Seq. ID No. 5782, Seq. ID No. 5784, and Seq. ID No. 6104.

In yet another preferred embodiment, the polypeptide is selected from the *Alloiococcus otitidis* polypeptides identified as lipoproteins using the HMM Lipo algorithm, and is selected from one Seq. ID No. 46, Seq. ID No. 48, Seq. ID No. 172, Seq. ID No. 226, Seq. ID No. 420, Seq. ID No. 514, Seq. ID No. 576, Seq. ID No. 592, Seq. ID No. 594, Seq. ID No. 658, Seq. ID No. 660, Seq. ID No. 670, Seq. ID No. 676, Seq. ID No. 746, Seq. ID No. 748, Seq. ID No. 936, Seq. ID No. 1046, Seq. ID No. 1076, Seq. ID No. 1138, Seq. ID No. 1174, Seq. ID No. 1192, Seq. ID No. 1194, Seq. ID No. 1196, Seq. ID No. 1564, Seq. ID No. 1662, Seq. ID No. 1664, Seq. ID No. 1666, Seq. ID No. 1792, Seq. ID No. 1798, Seq. ID No. 1918, Seq. ID No. 1970, Seq. ID No. 2116, Seq. ID No. 2160, Seq. ID No. 2430, Seq. ID No. 2528, Seq. ID No. 2700, Seq. ID No. 2816, Seq. ID No. 2876, Seq. ID No. 2976, Seq. ID No. 2978, Seq. ID No. 2992, Seq. ID No. 3044, Seq. ID No. 3324, Seq. ID No. 3338, Seq. ID No. 4134, Seq. ID No. 4138, Seq. ID No. 4482, Seq. ID No. 4706, Seq. ID No. 4828, Seq. ID No. 4870, Seq. ID No. 5116, Seq. ID No. 5378, Seq. ID No. 5380, Seq. ID No. 5492, Seq. ID No. 5510, Seq. ID No. 5514, Seq. ID No. 5526, Seq. ID No. 5530, Seq. ID No. 5532, Seq. ID No. 5890, Seq. ID No. 5910, Seq. ID No. 6026, Seq. ID No. 6028, Seq. ID No. 6088, Seq. ID No. 6090, Seq. ID No. 6326, Seq. ID No. 6328, Seq. ID No. 6416, Seq. ID No. 6638, Seq. ID No. 6640, and Seq. ID No. 6646.

In yet another preferred embodiment, the polypeptide is selected from the *Alloiococcus otitidis* polypeptides, wherein the polypeptide is non-covalently associated with the peptidoglycan layer and is selected from one of Seq. ID No. 3590, Seq. ID No. 3988, Seq. ID No. 5220, and Seq. ID No. 5338.

In yet another preferred embodiment, the polypeptide is selected from the *Alloiococcus otitidis* polypeptides having an RGD_X motif wherein X is not a proline residue, and is selected from one of Seq. ID No. 38, Seq. ID No. 100, Seq. ID No. 108, Seq. ID No. 110, Seq. ID No. 112, Seq. ID No. 352, Seq. ID No. 354, Seq. ID No. 466, Seq. ID No. 468, Seq. ID No. 470, Seq. ID No. 472, Seq. ID No. 684, Seq. ID No. 822, Seq. ID No. 824, Seq. ID No. 1022, Seq. ID No. 1024, Seq. ID No. 1158, Seq. ID No. 1160, Seq. ID No. 1234, Seq. ID No. 1334, Seq. ID No. 1336, Seq. ID No. 1450, Seq. ID No. 1560, Seq. ID No. 1562, Seq. ID No. 1564, Seq. ID No. 1626, Seq. ID No. 1778, Seq. ID No. 1828, Seq. ID No. 1830, Seq. ID No. 1872, Seq. ID No. 1926, Seq. ID No.

2136, Seq. ID No. 2146, Seq. ID No. 2174, Seq. ID No. 2176, Seq. ID No. 2178, Seq. ID
No. 2180, Seq. ID No. 2260, Seq. ID No. 2318, Seq. ID No. 2320, Seq. ID No. 2322,
Seq. ID No. 2324, Seq. ID No. 2326, Seq. ID No. 2328, Seq. ID No. 2330, Seq. ID No.
2402, Seq. ID No. 2672, Seq. ID No. 2864, Seq. ID No. 2870, Seq. ID No. 2920, Seq. ID
5 No. 2922, Seq. ID No. 2994, Seq. ID No. 3088, Seq. ID No. 3138, Seq. ID No. 3280,
Seq. ID No. 3282, Seq. ID No. 3284, Seq. ID No. 3334, Seq. ID No. 3336, Seq. ID No.
3498, Seq. ID No. 3500, Seq. ID No. 3502, Seq. ID No. 3534, Seq. ID No. 3672, Seq. ID
No. 3674, Seq. ID No. 3676, Seq. ID No. 3838, Seq. ID No. 3840, Seq. ID No. 3842,
Seq. ID No. 3844, Seq. ID No. 3930, Seq. ID No. 3962, Seq. ID No. 4038, Seq. ID No.
10 4194, Seq. ID No. 4240, Seq. ID No. 4328, Seq. ID No. 4330, Seq. ID No. 4334, Seq. ID
No. 4394, Seq. ID No. 4464, Seq. ID No. 4466, Seq. ID No. 4468, Seq. ID No. 4598,
Seq. ID No. 4630, Seq. ID No. 4632, Seq. ID No. 4676, Seq. ID No. 4678, Seq. ID No.
4680, Seq. ID No. 4690, Seq. ID No. 4692, Seq. ID No. 4694, Seq. ID No. 4782, Seq. ID
No. 4800, Seq. ID No. 4802, Seq. ID No. 4804, Seq. ID No. 4862, Seq. ID No. 5010,
15 Seq. ID No. 5144, Seq. ID No. 5146, Seq. ID No. 5180, Seq. ID No. 5182, Seq. ID No.
5184, Seq. ID No. 5250, Seq. ID No. 5252, Seq. ID No. 5254, Seq. ID No. 5260, Seq. ID
No. 5262, Seq. ID No. 5294, Seq. ID No. 5296, Seq. ID No. 5298, Seq. ID No. 5300,
Seq. ID No. 5308, Seq. ID No. 5310, Seq. ID No. 5412, Seq. ID No. 5536, Seq. ID No.
5538, Seq. ID No. 5746, Seq. ID No. 5822, Seq. ID No. 5824, Seq. ID No. 5826, Seq. ID
20 No. 6030, Seq. ID No. 6172, Seq. ID No. 6308, Seq. ID No. 6310, and Seq. ID No. 6312.

In another preferred embodiment, the polypeptide is selected from *Alloioococcus*
otitidis polypeptides predicted by BlastP as being involved in capsule biosynthesis and
transport, and is selected from one of Seq. ID No. 50, Seq. ID No. 52, Seq. ID No. 54,
Seq. ID No. 60, Seq. ID No. 196, Seq. ID No. 690, Seq. ID No. 704, Seq. ID No. 926,
25 Seq. ID No. 1598, Seq. ID No. 1602, Seq. ID No. 1608, Seq. ID No. 1612, Seq. ID No.
1614, Seq. ID No. 1714, Seq. ID No. 2030, Seq. ID No. 2264, Seq. ID No. 2270, Seq. ID
No. 2374, Seq. ID No. 2438, Seq. ID No. 2652, Seq. ID No. 2768, Seq. ID No. 2908,
Seq. ID No. 3398, Seq. ID No. 3400, Seq. ID No. 3480, Seq. ID No. 3488, Seq. ID No.
3492, Seq. ID No. 3494, Seq. ID No. 3496, Seq. ID No. 3498, Seq. ID No. 3520, Seq. ID
30 No. 3522, Seq. ID No. 3530, Seq. ID No. 3536, Seq. ID No. 3562, Seq. ID No. 3884,
Seq. ID No. 3892, Seq. ID No. 3982, and Seq. ID No. 4088.

In another preferred embodiment, the polypeptide is selected from *Alloioococcus*
otitidis polypeptides predicted by BlastP as being localized in the capsule loci region of

Alloiococcus otitidis, and is selected from one of Seq. ID No. 46, Seq. ID No. 48, Seq. ID No. 52, Seq. ID No. 54, Seq. ID No. 56, Seq. ID No. 58, Seq. ID No. 60, Seq. ID No. 684, Seq. ID No. 686, Seq. ID No. 688, Seq. ID No. 690, Seq. ID No. 692, Seq. ID No. 694, Seq. ID No. 696, Seq. ID No. 698, Seq. ID No. 700, Seq. ID No. 702, Seq. ID No. 704, Seq. ID No. 706, Seq. ID No. 708, Seq. ID No. 710, Seq. ID No. 712, Seq. ID No. 714, Seq. ID No. 716, Seq. ID No. 718, Seq. ID No. 720, Seq. ID No. 722, Seq. ID No. 724, Seq. ID No. 726, Seq. ID No. 728, Seq. ID No. 730, Seq. ID No. 732, Seq. ID No. 734, Seq. ID No. 736, Seq. ID No. 738, Seq. ID No. 740, Seq. ID No. 742, Seq. ID No. 744, Seq. ID No. 746, Seq. ID No. 748, Seq. ID No. 750, Seq. ID No. 752, Seq. ID No. 754, Seq. ID No. 3390, Seq. ID No. 3392, Seq. ID No. 3394, Seq. ID No. 3396, Seq. ID No. 3398, Seq. ID No. 3400, Seq. ID No. 3402, Seq. ID No. 3404, Seq. ID No. 3406, Seq. ID No. 3408, Seq. ID No. 3410, Seq. ID No. 3412, Seq. ID No. 3414, Seq. ID No. 3416, Seq. ID No. 3418, Seq. ID No. 3420, Seq. ID No. 3422, Seq. ID No. 3424, Seq. ID No. 3426, Seq. ID No. 3428, Seq. ID No. 3430, Seq. ID No. 3432, Seq. ID No. 3434, Seq. ID No. 3436, Seq. ID No. 3438, Seq. ID No. 3440, Seq. ID No. 3442, Seq. ID No. 3444, Seq. ID No. 3446, Seq. ID No. 3448, Seq. ID No. 3450, Seq. ID No. 3452, Seq. ID No. 3454, Seq. ID No. 3456, Seq. ID No. 3458, Seq. ID No. 3460, Seq. ID No. 3462, Seq. ID No. 3464, Seq. ID No. 3466, Seq. ID No. 3468, Seq. ID No. 3470, Seq. ID No. 3472, Seq. ID No. 3474, Seq. ID No. 3476, Seq. ID No. 3478, Seq. ID No. 3480, Seq. ID No. 3482, Seq. ID No. 3484, Seq. ID No. 3486, Seq. ID No. 3488, Seq. ID No. 3490, Seq. ID No. 3492, Seq. ID No. 3494, Seq. ID No. 3496, Seq. ID No. 3498, Seq. ID No. 3500, Seq. ID No. 3502, Seq. ID No. 3504, Seq. ID No. 3506, Seq. ID No. 3508, Seq. ID No. 3510, Seq. ID No. 3512, Seq. ID No. 3514, Seq. ID No. 3516, Seq. ID No. 3518, Seq. ID No. 3520, Seq. ID No. 3522, Seq. ID No. 3524, Seq. ID No. 3526, Seq. ID No. 3528, Seq. ID No. 3530, Seq. ID No. 3532, Seq. ID No. 3534, Seq. ID No. 3536, Seq. ID No. 3538, Seq. ID No. 3540, Seq. ID No. 3542, Seq. ID No. 3544, Seq. ID No. 3546, Seq. ID No. 3548, Seq. ID No. 3550, Seq. ID No. 3552, Seq. ID No. 3554, Seq. ID No. 3556, Seq. ID No. 3558, Seq. ID No. 3560, and Seq. ID No. 3562.

In another preferred embodiment, the polypeptide is selected from the *Alloiococcus otitidis* polypeptides identified by BlastP analysis to be associated with sporulation, and is selected from one of Seq. ID No. 1138, Seq. ID No. 1456, Seq. ID No. 2138, Seq. ID No. 2142, Seq. ID No. 2166, Seq. ID No. 2180, Seq. ID No. 2302, Seq. ID

No. 2754, Seq. ID No. 4212, Seq. ID No. 4252, Seq. ID No. 4328, Seq. ID No. 4570, Seq. ID No. 4720, and Seq. ID No. 4730.

In another preferred embodiment, the polypeptide is selected from the *Alloiococcus otitidis* polypeptides identified by BlastP analysis as being encoded by unique ORFs, and is selected from one of Seq. ID No. 8, Seq. ID No. 20, Seq. ID No. 22, Seq. ID No. 24, Seq. ID No. 32, Seq. ID No. 40, Seq. ID No. 66, Seq. ID No. 68, Seq. ID No. 70, Seq. ID No. 92, Seq. ID No. 100, Seq. ID No. 106, Seq. ID No. 114, Seq. ID No. 116, Seq. ID No. 124, Seq. ID No. 126, Seq. ID No. 128, Seq. ID No. 132, Seq. ID No. 134, Seq. ID No. 140, Seq. ID No. 152, Seq. ID No. 160, Seq. ID No. 162, Seq. ID No. 164, Seq. ID No. 166, Seq. ID No. 170, Seq. ID No. 186, Seq. ID No. 190, Seq. ID No. 194, Seq. ID No. 230, Seq. ID No. 232, Seq. ID No. 256, Seq. ID No. 258, Seq. ID No. 260, Seq. ID No. 276, Seq. ID No. 338, Seq. ID No. 340, Seq. ID No. 348, Seq. ID No. 350, Seq. ID No. 358, Seq. ID No. 360, Seq. ID No. 370, Seq. ID No. 372, Seq. ID No. 378, Seq. ID No. 386, Seq. ID No. 388, Seq. ID No. 394, Seq. ID No. 400, Seq. ID No. 402, Seq. ID No. 404, Seq. ID No. 408, Seq. ID No. 420, Seq. ID No. 432, Seq. ID No. 478, Seq. ID No. 496, Seq. ID No. 508, Seq. ID No. 520, Seq. ID No. 542, Seq. ID No. 546, Seq. ID No. 548, Seq. ID No. 550, Seq. ID No. 558, Seq. ID No. 590, Seq. ID No. 618, Seq. ID No. 620, Seq. ID No. 634, Seq. ID No. 640, Seq. ID No. 642, Seq. ID No. 644, Seq. ID No. 646, Seq. ID No. 648, Seq. ID No. 652, Seq. ID No. 654, Seq. ID No. 656, Seq. ID No. 668, Seq. ID No. 692, Seq. ID No. 694, Seq. ID No. 696, Seq. ID No. 698, Seq. ID No. 716, Seq. ID No. 718, Seq. ID No. 720, Seq. ID No. 732, Seq. ID No. 734, Seq. ID No. 742, Seq. ID No. 744, Seq. ID No. 746, Seq. ID No. 748, Seq. ID No. 750, Seq. ID No. 752, Seq. ID No. 756, Seq. ID No. 758, Seq. ID No. 760, Seq. ID No. 762, Seq. ID No. 764, Seq. ID No. 766, Seq. ID No. 768, Seq. ID No. 802, Seq. ID No. 804, Seq. ID No. 806, Seq. ID No. 808, Seq. ID No. 810, Seq. ID No. 812, Seq. ID No. 814, Seq. ID No. 834, Seq. ID No. 842, Seq. ID No. 850, Seq. ID No. 852, Seq. ID No. 854, Seq. ID No. 856, Seq. ID No. 888, Seq. ID No. 890, Seq. ID No. 892, Seq. ID No. 904, Seq. ID No. 906, Seq. ID No. 910, Seq. ID No. 938, Seq. ID No. 942, Seq. ID No. 944, Seq. ID No. 952, Seq. ID No. 958, Seq. ID No. 974, Seq. ID No. 976, Seq. ID No. 988, Seq. ID No. 1006, Seq. ID No. 1008, Seq. ID No. 1010, Seq. ID No. 1012, Seq. ID No. 1020, Seq. ID No. 1026, Seq. ID No. 1028, Seq. ID No. 1046, Seq. ID No. 1048, Seq. ID No. 1072, Seq. ID No. 1074, Seq. ID No. 1078, Seq. ID No. 1106, Seq. ID No. 1108, Seq. ID No. 1112, Seq. ID No. 1132, Seq. ID No. 1136, Seq. ID No. 1140, Seq. ID

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6638, Seq. ID No. 6640, Seq. ID No. 6644, Seq. ID No. 6646, Seq. ID No. 6648, and Seq. ID No. 6650.

In yet another preferred embodiment, the polypeptide is selected from the *Alloiococcus otitidis* polypeptides identified by Glimmer™ ORF finder program, and is
5 selected from one of Seq. ID No. 2, Seq. ID No. 6, Seq. ID No. 12, Seq. ID No. 14, Seq. ID No. 16, Seq. ID No. 18, Seq. ID No. 26, Seq. ID No. 28, Seq. ID No. 30, Seq. ID No. 36, Seq. ID No. 38, Seq. ID No. 42, Seq. ID No. 44, Seq. ID No. 48, Seq. ID No. 52, Seq. ID No. 54, Seq. ID No. 60, Seq. ID No. 64, Seq. ID No. 70, Seq. ID No. 74, Seq. ID No. 76, Seq. ID No. 82, Seq. ID No. 84, Seq. ID No. 90, Seq. ID No. 94, Seq. ID No. 98, Seq.
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In yet another preferred embodiment, the polypeptide is selected from the *Alloiococcus otitidis* polypeptides identified by GeneMark™ ORF finder program, and is selected from one of Seq. ID No. 2, Seq. ID No. 4, Seq. ID No. 12, Seq. ID No. 14, Seq. ID No. 16, Seq. ID No. 18, Seq. ID No. 26, Seq. ID No. 28, Seq. ID No. 30, Seq. ID No. 36, Seq. ID No. 38, Seq. ID No. 40, Seq. ID No. 42, Seq. ID No. 44, Seq. ID No. 46, Seq. ID No. 50, Seq. ID No. 54, Seq. ID No. 58, Seq. ID No. 62, Seq. ID No. 70, Seq. ID No. 72, Seq. ID No. 76, Seq. ID No. 82, Seq. ID No. 84, Seq. ID No. 90, Seq. ID No. 96, Seq. ID No. 102, Seq. ID No. 112, Seq. ID No. 120, Seq. ID No. 126, Seq. ID No. 130, Seq. ID No. 136, Seq. ID No. 138, Seq. ID No. 142, Seq. ID No. 148, Seq. ID No. 152, Seq. ID No. 156, Seq. ID No. 168, Seq. ID No. 172, Seq. ID No. 182, Seq. ID No. 186, Seq. ID No. 188, Seq. ID No. 190, Seq. ID No. 192, Seq. ID No. 196, Seq. ID No. 200, Seq. ID No. 208, Seq. ID No. 214, Seq. ID No. 220, Seq. ID No. 222, Seq. ID No. 226, Seq. ID No. 228, Seq. ID No. 230, Seq. ID No. 234, Seq. ID No. 240, Seq. ID No. 242, Seq. ID No. 244, Seq. ID No. 254, Seq. ID No. 262, Seq. ID No. 264, Seq. ID No. 268, Seq. ID No. 274, Seq. ID No. 276, Seq. ID No. 278, Seq. ID No. 280, Seq. ID No. 292, Seq. ID No. 294, Seq. ID No. 296, Seq. ID No. 300, Seq. ID No. 304, Seq. ID No. 310, Seq. ID No. 312, Seq. ID No. 316, Seq. ID No. 320, Seq. ID No. 324, Seq. ID No. 332, Seq. ID No. 342, Seq. ID No. 346, Seq. ID No. 352, Seq. ID No. 356, Seq. ID No. 362, Seq. ID No. 364, Seq. ID No. 366, Seq. ID No. 376, Seq. ID No. 380, Seq. ID No. 382, Seq. ID No. 384, Seq. ID No. 390, Seq. ID No. 392, Seq. ID No. 396, Seq. ID No. 400, Seq. ID No. 406, Seq. ID No. 410, Seq. ID No. 414, Seq. ID No. 418, Seq. ID No. 422, Seq. ID No. 424, Seq. ID No. 426, Seq. ID No. 428, Seq. ID No. 430, Seq. ID No. 436, Seq. ID No. 438, Seq. ID No. 440, Seq. ID No. 442, Seq. ID No. 444, Seq. ID No. 446, Seq. ID No. 448, Seq. ID No. 450, Seq. ID No. 460, Seq. ID No. 466, Seq. ID No. 486, Seq. ID No. 502, Seq. ID No. 506, Seq. ID No. 512, Seq. ID No. 514, Seq. ID No. 518, Seq. ID No. 520, Seq. ID No. 524, Seq. ID No. 530, Seq. ID No. 534, Seq. ID No. 536, Seq. ID No. 542, Seq. ID No. 544, Seq. ID No. 552, Seq. ID No. 554, Seq. ID No. 560, Seq. ID No. 564, Seq. ID No. 570, Seq. ID No. 576, Seq. ID No. 580, Seq. ID No. 584, Seq. ID No. 592, Seq. ID No. 596, Seq. ID No. 602, Seq. ID No. 606, Seq. ID No. 608, Seq. ID No. 612, Seq. ID No. 614, Seq. ID No. 616, Seq. ID No. 622, Seq. ID No. 628, Seq. ID No. 630, Seq. ID No. 634, Seq. ID No. 636, Seq. ID No. 638, Seq. ID No. 644, Seq. ID No. 650, Seq. ID No. 652, Seq. ID No. 656, Seq. ID No. 658, Seq. ID No. 670, Seq. ID No. 672, Seq. ID No. 676, Seq. ID No. 682, Seq. ID No. 684, Seq. ID No. 686, Seq. ID

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In yet another preferred embodiment, the polypeptide is selected from the *Alloiococcus otitidis* polypeptides identified by the Applicants' assignee's ORF finder

program that searches for an ATG, GTG or TTG Start codon between a Stop-Stop region, and wherein the polypeptide is selected from one Seq. ID No. 2, Seq. ID No. 6, Seq. ID No. 12, Seq. ID No. 14, Seq. ID No. 16, Seq. ID No. 18, Seq. ID No. 20, Seq. ID No. 22, Seq. ID No. 24, Seq. ID No. 28, Seq. ID No. 30, Seq. ID No. 32, Seq. ID No. 36, Seq. ID No. 38, Seq. ID No. 42, Seq. ID No. 44, Seq. ID No. 46, Seq. ID No. 48, Seq. ID No. 50, Seq. ID No. 52, Seq. ID No. 54, Seq. ID No. 56, Seq. ID No. 58, Seq. ID No. 60, Seq. ID No. 66, Seq. ID No. 68, Seq. ID No. 76, Seq. ID No. 78, Seq. ID No. 80, Seq. ID No. 82, Seq. ID No. 84, Seq. ID No. 90, Seq. ID No. 92, Seq. ID No. 94, Seq. ID No. 98, Seq. ID No. 100, Seq. ID No. 104, Seq. ID No. 106, Seq. ID No. 108, Seq. ID No. 110, Seq. ID No. 112, Seq. ID No. 114, Seq. ID No. 116, Seq. ID No. 118, Seq. ID No. 120, Seq. ID No. 122, Seq. ID No. 128, Seq. ID No. 130, Seq. ID No. 132, Seq. ID No. 134, Seq. ID No. 136, Seq. ID No. 138, Seq. ID No. 140, Seq. ID No. 144, Seq. ID No. 146, Seq. ID No. 148, Seq. ID No. 150, Seq. ID No. 154, Seq. ID No. 156, Seq. ID No. 158, Seq. ID No. 160, Seq. ID No. 162, Seq. ID No. 164, Seq. ID No. 166, Seq. ID No. 168, Seq. ID No. 170, Seq. ID No. 172, Seq. ID No. 176, Seq. ID No. 178, Seq. ID No. 180, Seq. ID No. 182, Seq. ID No. 184, Seq. ID No. 188, Seq. ID No. 192, Seq. ID No. 194, Seq. ID No. 196, Seq. ID No. 202, Seq. ID No. 206, Seq. ID No. 208, Seq. ID No. 216, Seq. ID No. 220, Seq. ID No. 222, Seq. ID No. 224, Seq. ID No. 226, Seq. ID No. 228, Seq. ID No. 232, Seq. ID No. 234, Seq. ID No. 240, Seq. ID No. 244, Seq. ID No. 246, Seq. ID No. 248, Seq. ID No. 254, Seq. ID No. 258, Seq. ID No. 260, Seq. ID No. 262, Seq. ID No. 264, Seq. ID No. 266, Seq. ID No. 268, Seq. ID No. 270, Seq. ID No. 274, Seq. ID No. 278, Seq. ID No. 280, Seq. ID No. 282, Seq. ID No. 284, Seq. ID No. 292, Seq. ID No. 294, Seq. ID No. 298, Seq. ID No. 302, Seq. ID No. 306, Seq. ID No. 308, Seq. ID No. 310, Seq. ID No. 314, Seq. ID No. 318, Seq. ID No. 322, Seq. ID No. 324, Seq. ID No. 326, Seq. ID No. 332, Seq. ID No. 334, Seq. ID No. 336, Seq. ID No. 338, Seq. ID No. 340, Seq. ID No. 344, Seq. ID No. 346, Seq. ID No. 348, Seq. ID No. 350, Seq. ID No. 354, Seq. ID No. 356, Seq. ID No. 358, Seq. ID No. 360, Seq. ID No. 362, Seq. ID No. 364, Seq. ID No. 366, Seq. ID No. 368, Seq. ID No. 370, Seq. ID No. 372, Seq. ID No. 376, Seq. ID No. 378, Seq. ID No. 380, Seq. ID No. 384, Seq. ID No. 386, Seq. ID No. 388, Seq. ID No. 390, Seq. ID No. 392, Seq. ID No. 394, Seq. ID No. 398, Seq. ID No. 402, Seq. ID No. 404, Seq. ID No. 406, Seq. ID No. 408, Seq. ID No. 410, Seq. ID No. 416, Seq. ID No. 424, Seq. ID No. 426, Seq. ID No. 428, Seq. ID No. 430, Seq. ID No. 432, Seq. ID No. 434, Seq. ID No. 436, Seq. ID No. 438, Seq. ID No. 440,

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In yet another preferred embodiment, the polypeptide is selected from the

5 *Alloiococcus otitidis* polypeptides identified by the Applicants' assignee's ORF finder program that searches for a transmembrane domain between two Stop codons and a Start codon immediately upstream of this transmembrane region, and is selected from one of Seq. ID No. 8, Seq. ID No. 10, Seq. ID No. 34, Seq. ID No. 48, Seq. ID No. 68, Seq. ID No. 86, Seq. ID No. 88, Seq. ID No. 124, Seq. ID No. 134, Seq. ID No. 142, Seq.

10 ID No. 160, Seq. ID No. 164, Seq. ID No. 192, Seq. ID No. 210, Seq. ID No. 212, Seq. ID No. 216, Seq. ID No. 218, Seq. ID No. 226, Seq. ID No. 236, Seq. ID No. 238, Seq. ID No. 250, Seq. ID No. 252, Seq. ID No. 256, Seq. ID No. 272, Seq. ID No. 278, Seq. ID No. 286, Seq. ID No. 288, Seq. ID No. 290, Seq. ID No. 328, Seq. ID No. 330, Seq. ID No. 374, Seq. ID No. 376, Seq. ID No. 420, Seq. ID No. 488, Seq. ID No. 498, Seq. ID

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25 5886, Seq. ID No. 5890, Seq. ID No. 5894, Seq. ID No. 5896, Seq. ID No. 5900, Seq. ID
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6190, Seq. ID No. 6192, Seq. ID No. 6198, Seq. ID No. 6204, Seq. ID No. 6206, Seq. ID
No. 6210, Seq. ID No. 6222, Seq. ID No. 6224, Seq. ID No. 6226, Seq. ID No. 6228,
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6246, Seq. ID No. 6250, Seq. ID No. 6254, Seq. ID No. 6264, Seq. ID No. 6266, Seq. ID No. 6274, Seq. ID No. 6276, Seq. ID No. 6286, Seq. ID No. 6290, Seq. ID No. 6302, Seq. ID No. 6304, Seq. ID No. 6364, Seq. ID No. 6378, Seq. ID No. 6382, Seq. ID No. 6384, Seq. ID No. 6416, Seq. ID No. 6428, Seq. ID No. 6432, Seq. ID No. 6474, Seq. ID No. 6498, Seq. ID No. 6572, Seq. ID No. 6582, Seq. ID No. 6594, Seq. ID No. 6600, Seq. ID No. 6632, and Seq. ID No. 6640.

In another aspect of the invention, the polypeptides are expressed and purified in a recombinant expression system. Thus, in certain embodiments, the invention provides a recombinant expression vector comprising a nucleotide sequence having at least about 70% identity to a nucleotide sequence chosen from one of odd numbered sequences set out in SEQ ID NO: 1 through SEQ ID NO: 6649, a complement thereof, a degenerate variant thereof, or a fragment thereof.

In certain other embodiments, the polynucleotide is selected from the group consisting of genomic DNA, cDNA, and RNA. In another embodiment, the polynucleotide comprised within the vector further comprises heterologous nucleotide sequences.

In other embodiments, the polynucleotide is operatively linked to one or more gene expression regulatory elements. In yet other embodiments, the polynucleotide encodes a polypeptide comprising an amino acid sequence having at least about 70% identity to an amino acid sequence chosen from one of even numbered sequences set out in SEQ ID NO: 2 through SEQ ID NO: 6650, a complement thereof, a biological equivalent thereof, or a fragment thereof. In a preferred embodiment, the vector is a plasmid.

In another aspect of the invention, provided is a genetically engineered host cell, transfected, transformed or infected with a recombinant expression vector comprising a nucleotide sequence having at least about 70% identity to a nucleotide sequence chosen from one of odd numbered sequences set out in SEQ ID NO: 1 through SEQ ID NO: 6649, a complement thereof, a degenerate variant thereof, or a fragment thereof. In a preferred embodiment, the host cell is a bacterial cell. In a further embodiment, the polynucleotide is expressed to produce the encoded polypeptide, a complement thereof, a biological equivalent thereof, or a fragment thereof.

In another aspect of the invention, the polypeptides are expressed and purified in a recombinant expression system. Thus, in certain embodiments, the invention provides

a recombinant expression vector comprising a nucleotide sequence having at least about 70% identity to a nucleotide sequence chosen from one of odd numbered sequences set out in SEQ ID NO: 1 through SEQ ID NO: 6649, a complement thereof, a degenerate variant thereof, or a fragment thereof. In certain other embodiments, the polynucleotide
5 is selected from the group consisting of genomic DNA, cDNA, and RNA. In another embodiment, the polynucleotide comprised within the vector further comprises heterologous nucleotide sequences.

In other embodiments, the present invention provides an antibody specific for an *Alloiococcus otitidis* polynucleotide chosen from one of odd numbered sequences set out
10 in SEQ ID NO: 1 through SEQ ID NO: 6649, a fragment thereof, a degenerate variant thereof, or an antibody specific for an *Alloiococcus otitidis* polypeptide chosen from one of even numbered sequences set out in SEQ ID NO: 2 through SEQ ID NO: 6650, a biological equivalent thereof, or a fragment thereof. In certain embodiments, the antibody is selected from the group consisting of monoclonal, polyclonal, chimeric,
15 human, humanized and single chain. In a preferred embodiment, the antibody is monoclonal. In another preferred embodiment, the antibody is humanized.

The present invention further provides pharmaceutical compositions, in particular immunogenic compositions, for the prevention and/or treatment of bacterial infection. Thus, in one embodiment an immunogenic composition is provided comprising one or
20 more polypeptides having an amino acid sequence chosen from one or more of even

numbered sequences set out in SEQ ID NO: 2 through SEQ ID NO: 6650, a biological equivalent thereof, or a fragment thereof. In certain embodiments, the composition further comprises a pharmaceutically acceptable carrier. In yet other embodiments, the immunogenic composition further comprises one or more adjuvants. In preferred

- 5 embodiments the polypeptide of the invention is further defined as: (a) an *Alloiococcus otitidis* polypeptide predicted by SignalP algorithm analysis as having met all four criteria set out in the SignalP algorithm for a polypeptide having a signal peptide and a subset of these are predicted by HMM SignalP algorithm analysis as having a signal peptide; (b) an *Alloiococcus otitidis* polypeptide predicted by SignalP algorithm analysis as having
- 10 met three of the four criteria set out in the SignalP algorithm for a polypeptide having a signal peptide and a subset of these predicted by HMM SignalP algorithm analysis as having a signal peptide; (c) an *Alloiococcus otitidis* polypeptide predicted by HMM SignalP algorithm analysis as having a signal peptide; (d) an *Alloiococcus otitidis* polypeptide predicted by HMM SignalP algorithm analysis as being a non-secretory
- 15 protein; (e) an *Alloiococcus otitidis* polypeptide identified by Pfam analysis; (f) an *Alloiococcus otitidis* polypeptide identified by BlastP analysis as being secreted, surface exposed, vaccine candidate; (g) an *Alloiococcus otitidis* polypeptide identified using proteomics methodology as sharing homology with surface exposed proteins of *Streptococcus pneumoniae*; (h) an *Alloiococcus otitidis* polypeptide having a LPXTG
- 20 motif, wherein the polypeptide is covalently attached to the peptidoglycan layer; (i) an *Alloiococcus otitidis* lipoprotein; (j) an *Alloiococcus otitidis* polypeptide non-covalently associated with the peptidoglycan layer; (k) an *Alloiococcus otitidis* polypeptide having an RGD_X motif wherein X is not a proline residue; (l) an *Alloiococcus otitidis* polypeptide predicted by BlastP as being involved in capsule biosynthesis and transport; (m) an
- 25 *Alloiococcus otitidis* polypeptide identified by BlastP as being localized within the capsule loci of the *Alloiococcus otitidis* genome; (n) an *Alloiococcus otitidis* polypeptide predicted by BlastP as being associated with sporulation; (o) an *Alloiococcus otitidis* polypeptide encoded by unique ORFs identified by BlastP analysis as having a BlastP 'E Value' of $> e^{-10}$; (p) an *Alloiococcus otitidis* polypeptide identified by Glimmer™ ORF finder
- 30 program; (q) an *Alloiococcus otitidis* polypeptide identified by GeneMark™ ORF finder program; (r) an *Alloiococcus otitidis* polypeptide identified by Applicants' assignee's ORF finder program that searches for an ATG, GTG or TTG Start codon between a Stop-Stop region; and (s) an *Alloiococcus otitidis* polypeptide identified by Applicants' assignee's

ORF finder program that searches for a transmembrane domain between two Stop codons and a Start codon immediately upstream of this transmembrane region.

In one preferred embodiment, the invention comprises an isolated polypeptide encoded by a polynucleotide contained within the *Alloiococcus otitidis* genomic
5 sequence, wherein the polynucleotide comprises a nucleotide sequence having at least about 70% identity to a nucleotide sequence contained within SEQ ID NO: 6651, a complement thereof, a degenerate variant thereof, and a fragment thereof.

In certain other embodiments, the immunogenic composition further comprises heterologous amino acids. In particular embodiments, the polypeptide is a fusion
10 polypeptide.

In further embodiments, provided is an immunogenic composition comprising a polynucleotide having a nucleotide sequence chosen from one of odd numbered sequences listed in SEQ ID NO: 1 through SEQ ID NO: 6649, a degenerate variant thereof, or a fragment thereof and is comprised in an expression vector. In preferred
15 embodiments, the vector is plasmid DNA. In another embodiment, the polynucleotide comprises heterologous nucleotides. In still other embodiments, the polynucleotide is operatively linked to one or more gene expression regulatory elements. In yet other embodiments, the polynucleotide directs the expression of a neutralizing epitope of *Alloiococcus otitidis*. In preferred embodiments, the immunogenic composition further
20 comprises one or more adjuvants.

In yet further embodiments, provided is a pharmaceutical composition comprising a polypeptide and a pharmaceutically acceptable carrier, wherein the polypeptide comprises an amino acid chosen from one of even numbered sequence listings set out in SEQ ID NO: 2 through SEQ ID NO: 6650, a complement thereof, a biological
25 equivalent thereof, or a fragment thereof. In preferred embodiments the polypeptide of the invention is further defined as: (a) an *Alloiococcus otitidis* polypeptide predicted by SignalP algorithm analysis as having met all four criteria set out in the SignalP algorithm for a polypeptide having a signal peptide and a subset of these are predicted by HMM SignalP algorithm analysis as having a signal peptide; (b) an *Alloiococcus otitidis*
30 polypeptide predicted by SignalP algorithm analysis as having met three of the four criteria set out in the SignalP algorithm for a polypeptide having a signal peptide and a subset of these predicted by HMM SignalP algorithm analysis as having a signal peptide; (c) an *Alloiococcus otitidis* polypeptide predicted by HMM SignalP algorithm analysis as

having a signal peptide; (d) an *Alloicoccus otitidis* polypeptide predicted by HMM SignalP algorithm analysis as being a non-secretory protein; (e) an *Alloicoccus otitidis* polypeptide identified by Pfam analysis; (f) an *Alloicoccus otitidis* polypeptide identified by BlastP analysis as being secreted, surface exposed, vaccine; (g) an *Alloicoccus*
 5 *otitidis* polypeptide identified using proteomics methodology as sharing homology with surface exposed proteins of *Streptococcus pneumoniae*; (h) an *Alloicoccus otitidis* polypeptide having a LPXTG motif, wherein the polypeptide is covalently attached to the peptidoglycan layer; (i) an *Alloicoccus otitidis* lipoprotein; (j) an *Alloicoccus otitidis* polypeptide non-covalently associated with the peptidoglycan layer; (k) an *Alloicoccus*
 10 *otitidis* polypeptide having an RGD_X motif wherein X is not a proline residue; (l) an *Alloicoccus otitidis* polypeptide predicted by BlastP as being involved in capsule biosynthesis and transport; (m) an *Alloicoccus otitidis* polypeptide identified by BlastP as being localized within the capsule loci of the *Alloicoccus otitidis* genome; (n) an *Alloicoccus otitidis* polypeptide predicted by BlastP as being associated with
 15 sporulation; (o) an *Alloicoccus otitidis* polypeptide encoded by unique ORFs identified by BlastP analysis as having a BlastP 'E Value' of $> e^{-10}$; (p) an *Alloicoccus otitidis* polypeptide identified by Glimmer™ ORF finder program; (q) an *Alloicoccus otitidis* polypeptide identified by GeneMark™ ORF finder program; (r) an *Alloicoccus otitidis* polypeptide identified by Applicants' assignee's ORF finder program that searches for an
 20 ATG, GTG or TTG start codon between a Stop-Stop region; and (s) an *Alloicoccus otitidis* polypeptide identified by Applicants' assignee's ORF finder program that searches for a transmembrane domain between two Stop codons and a Start codon immediately upstream of this transmembrane region.

In another embodiment, a method of immunizing against *Alloicoccus otitidis* is
 25 provided comprising administering to a host an immunizing amount of an immunogenic composition comprising a polypeptide and a pharmaceutically acceptable carrier, wherein the polypeptide comprises an amino acid sequence chosen from one of even numbered sequences set forth in SEQ ID NO: 2 through SEQ ID NO: 6650, a biological equivalent thereof, or a fragment thereof. In certain embodiments, the polypeptide is a
 30 fusion polypeptide. In other embodiments, the method further comprises administering an adjuvant.

In other embodiments the polypeptides of the invention comprise heterologous amino acids. In still other embodiments, the polypeptide in the pharmaceutical composition is a fusion polypeptide.

Other embodiments of the invention provide a DNA chip comprising an array of
5 polynucleotides, wherein at least one of the polynucleotides comprise a nucleotide sequence chosen from one of odd numbered sequences set forth in SEQ ID NO: 1 through SEQ ID NO: 6649, a complement thereof, a degenerate variant thereof, or a fragment thereof.

Also provided is a protein chip comprising an array of polypeptides, wherein at
10 least one of the polypeptides comprises an amino acid sequence chosen from one of even numbered sequences set forth in SEQ ID NO: 2 through SEQ ID NO: 6650, a biological equivalent thereof, or a fragment thereof.

The invention further provides methods of detecting *Alloiococcus otitidis* polynucleotides and polypeptides as well as kits for diagnosing *Alloiococcus otitidis*
15 infection. Other embodiments provide a method for the detection and/or identification of *Alloiococcus otitidis* in a biological sample comprising contacting the sample with an oligonucleotide probe of a polynucleotide comprising the nucleotide sequence chosen from one of odd numbered sequences is set forth in SEQ ID NO: 1 through SEQ ID NO: 6649, a degenerate variant thereof, or a fragment thereof, under conditions permitting
20 hybridization and detecting the presence of hybridization complexes in the sample, wherein hybridization complexes indicate the presence of *Alloiococcus otitidis* in the sample.

Still other embodiments provide a method for the detection and/or identification of *Alloiococcus otitidis* in a biological sample comprising nucleotide sequence chosen from
25 one of odd numbered sequences set forth in SEQ ID NO: 1 through SEQ ID NO: 6649, a degenerate variant thereof, or a fragment thereof, in the presence of nucleotides and a polymerase enzyme under conditions permitting primer extension and detecting the presence of primer extension products in the sample, wherein extension products indicate the presence of *Alloiococcus otitidis* in the sample.

Further embodiments provide a method for the detection and/or identification of
30 *Alloiococcus otitidis* in a biological sample comprising contacting the sample with an antibody specific for a polypeptide comprising an amino acid sequence chosen from one of even numbered sequences set forth in SEQ ID NO: 2 through SEQ ID NO: 6650, a

biological equivalent thereof, or a fragment thereof, under conditions permitting immune complex formation and detecting the presence of immune complexes in the sample, wherein immune complexes indicate the presence of *Alloiococcus otitidis* in the sample.

5 In certain embodiments, provided is a method for the detection and/or identification of antibodies to *Alloiococcus otitidis* in a biological sample comprising contacting the sample with a polypeptide comprising an amino acid sequence chosen from one of even numbered sequences set forth in SEQ ID NO: 2 through SEQ ID NO: 6650, a biological equivalent thereof, or a fragment thereof, under conditions permitting immune complex formation and detecting the presence of immune complexes in the
10 sample, wherein immune complexes indicate the presence of *Alloiococcus otitidis* in the sample.

Other embodiments of the invention provide a kit comprising a container containing an isolated polynucleotide comprising an nucleotide sequence chosen from one of odd numbered sequences set forth in SEQ ID NO: 1 through SEQ ID NO: 6649, a
15 degenerate variant thereof, or a fragment thereof. In a preferred embodiment, the polynucleotide is a primer or a probe, wherein when the polynucleotide is a primer, the kit further comprises a container containing a polymerase. In another embodiment, the kit further comprises a container containing dNTP.

Provided further is a kit comprising a container containing an antibody that
20 immunospecifically binds to a polypeptide comprising the amino acid sequence chosen from one of even numbered sequences set forth in SEQ ID NO: 2 through SEQ ID NO: 6650, a biological equivalent thereof, or a fragment thereof.

Provided also is a kit comprising a container containing an antibody that immunospecifically binds to a fusion polypeptide comprising at least the amino acid
25 sequence chosen from one of even numbered sequences set forth in SEQ ID NO: 2 through SEQ ID NO: 6650, a biological equivalent thereof, or a fragment thereof.

In a preferred embodiment of the invention, there is provided a genetically engineered host cell, transfected, transformed or infected with a recombinant expression vector comprising a nucleotide sequence having at least about 70% identity to a
30 nucleotide sequence chosen from one of odd numbered sequences set forth in SEQ ID NO: 1 through SEQ ID NO: 6649, a complement thereof, a degenerate variant thereof, or a fragment thereof under conditions suitable to produce one of the polypeptides of even

numbered sequences set out in SEQ ID NO: 2 through SEQ ID NO: 6650; and recovering the polypeptide.

Other features and advantages of the invention will be apparent from the following detailed description, from the preferred embodiments thereof, and from the
5 claims.

DETAILED DESCRIPTION OF THE INVENTION

The invention described herein addresses the need for an *Alloiococcus otitidis*
10 immunogenic composition that is effective in preventing most or all of the disease caused by *Alloiococcus otitidis*. The invention further addresses the need for methods of diagnosing *Alloiococcus otitidis* infection. The Applicants have identified novel *Alloiococcus otitidis* open reading frames (ORFs), which encode antigenic polypeptides. More particularly, the newly identified ORFs encode polypeptides that are surface
15 localized (*i.e.*, exposed) on *Alloiococcus otitidis*, and thus serve as potential antigenic polypeptides in immunogenic compositions. Thus, in certain embodiments, the invention comprises *Alloiococcus otitidis* polynucleotide ORFs encoding surface localized polypeptide antigens. In other embodiments, the present invention comprises surface localized antigenic polypeptides, encoded by the *Alloiococcus otitidis* ORFs.

20 In other embodiments, the invention comprises vectors comprising ORF sequences and host cells or animals transformed with these vectors. The invention also comprises transcriptional gene products of *Alloiococcus otitidis* ORFs, including, but not limited to mRNA, antisense RNA, antisense oligonucleotides, and ribozyme molecules, which are used to inhibit or control growth of the microorganism. The invention relates
25 also to methods of detecting *Alloiococcus otitidis* nucleic acids or polypeptides and kits for diagnosing *Alloiococcus otitidis* infection. The invention also relates to pharmaceutical compositions, in particular immunogenic compositions, for the prevention and/or treatment of bacterial infection, in particular infection caused by or exacerbated by *Alloiococcus otitidis*. In particular embodiments, the immunogenic compositions are
30 used for the treatment or prevention of non-systemic diseases, particularly of the otitis media, which are induced or exacerbated by *Alloiococcus otitidis*.

A. IDENTIFYING ORFs WITHIN THE GENOMIC SEQUENCE OF *ALLOIOCOCCUS OTITIDIS*

The invention is directed in particular embodiments to the identification of polynucleotides, more particularly ORFs, which encode *Alloiococcus otitidis* polypeptides. The availability of the bacterial genomic sequences has begun to play an important role in the identification of vaccine candidates through genomics, transcriptional profiling, and proteomics, coupled with the information processing capabilities of bioinformatics (McAtee *et al.*, 1998a; McAtee *et al.*, 1998b; Pizza *et al.*, 2000; Sonnenberg and Belisle, 1997; Weldingh *et al.*, 1998; McAtee *et al.*, 1998c). Thus, the Applicants have analyzed the *Alloiococcus otitidis* genomic sequences and utilized bioinformatics tools to identify the ORFs encoding polypeptides of the present invention. As described below, the ORFs were analyzed for a variety of characteristics.

Specifically, an extensive genomic analysis was performed *in silico* of the *Alloiococcus otitidis* genome using algorithms designed to identify genes that encode novel surface localized polypeptides or polypeptides with putative similarity to surface localized polypeptides in other organisms. Thus, a combined analysis of the *Alloiococcus otitidis* genome, using a unique set of three ORF finder algorithms (*i.e.*, GLIMMER™, Salzberg *et al.*, 1998, GeneMark™ (Lukashin and Borodovsky, 1998) and the Applicants' assignee's own programs), identified 3325 ORFs. The most stringent of the ORF finders; Glimmer™, identified 1529 ORFs; GeneMark™ identified 1,534 ORFs, while Applicants' assignee's ORF finders identified the most with 2706 ORFs.

For the purposes of this application, all ORFs with common stop codons are given the same ORF designation and will be treated as if they are the same ORF. In a number of instances, there are multiple start codons within a given ORF. These proteins of different length are indicated by a lower case letter suffix after the ORF number. For example, as shown in Table 2 below, ORF number 4a has a protein start beginning at nucleotide 3733, ORF number 4b has a protein start beginning at nucleotide 3049, and 4c has a protein start beginning or ending at nucleotide 2854 (these three sequences share a common ORF stop codon beginning at nucleotide 4152). As used herein, an ORF is defined as having one of three potential start site codons, ATG, GTG, TTG and one of three potential stop codons, TAA, TAG, TGA. The lower limit of amino acid length used (*e.g.*, ~74 amino acids) may also cause the algorithms to overlook some reading frames. However, "true" reading frames become an increasingly rare as the ORFs become shorter.

The initial annotation of the *Alloiococcus otitidis* ORFs was performed using the Basic Local Alignment Search Tool (BLAST; version 2.0) Gapped search algorithm, BlastP, to identify homologous sequences (Altschul *et al.*, 1997). A cutoff "E" value of anything $< e^{-10}$ was considered significant. The non-redundant protein sequence
5 databases used for the homology searches consisted of GenBank, SWISS-PROT, PIR, and TREMBL; these database sequences are updated daily. In the present invention, ORFs with a BlastP 'E' value result of $> e^{-10}$ are considered to be unique to *Alloiococcus otitidis*. Alternate quantitative expression values other than BlastP "E", *e.g.*, percent identity, may also be used to compare database sequences with the *Alloiococcus otitidis*
10 ORFs of the present invention.

A keyword search of the entire BLAST results was carried out using known or suspected target genes for immunogenic compositions, as well as using words that identified the location of a protein or function.

Several parameters were used to determine the partitioning of the predicted
15 *Alloiococcus otitidis* polypeptides of the invention. For example, polypeptides destined for translocation across the cytoplasmic membrane encode a leader signal (also called signal sequence) composed of a central hydrophobic region flanked at the N-terminus by positively charged residues (Pugsley, 1993). A software program, called SignalP, which identifies signal peptides and their cleavage sites based on neural networks (Nielsen *et al.*, 1997), was used in the present invention to analyze the amino acid sequence of an
20 ORF for such signal peptides. The first 60 N-terminal amino acids of each ORF were analyzed by SignalP software using the Gram-positive software database. The output generated four separate values: maximum C, maximum Y, maximum S, and mean S. The S-score, or signal region, is the probability of the position belonging to the signal
25 peptide. The C-score, or cleavage site, is the probability of the position being the first in the mature protein. The Y-score is the geometric average of the C-score and a smoothed derivative of the S-score. A conclusion of either a Yes or No is given next to each score. If all four conclusions are Yes, then a 'YES' is listed for that ORF (*see* Table 3 below); if three of the conclusions are Yes, then a 'yes' is listed for that ORF (*see*
30 Table 4 below); if two of the conclusions are Yes, then a 'maybe' is listed for that ORF; for all other cases, a 'No' is listed for that ORF (*see* Table 5 below).

A software program, called HMM SignalP, which identifies signal peptides and their cleavage sites based on hidden Markov models (Nielsen *et al.*, 1997), was used in

the present invention to analyze the amino acid sequence of an ORF for such signal peptides. The first 60 N-terminal amino acids of each ORF were analyzed by HMM SignalP software using the Gram-positive software database. The output generates a value from 0.00 to 1.00, whereby any value greater than 0.5 is listed as being a 'Signal Peptide' (see Table 5 below) and any value less than 0.5 is listed as being a 'Non-Secretory Protein' (see Table 6 below).

To predict polypeptide localization in bacteria, the software program PSORT was used (Nakai, 1991). PSORT predicts localization of polypeptides to the 'cytoplasm', the 'periplasm', and/or the 'cytoplasmic membrane' for Gram-positive bacteria, as well as the 'outer membrane' for Gram-negative bacteria. Transmembrane (TM) domains of polypeptides were analyzed using the software program TopPred2 (Cserzo *et al.*, 1997) (see Table 6 below).

The Hidden Markov Model (HMM) Pfam database (Sonnhammer, 1998) was used to identify *Alloiococcus otitidis* proteins that may belong to an existing protein family (see Table 7 below). Keyword searching of this output was further used to help identify additional vaccine candidates that may have been missed by the BLAST search criteria (see Table 8 below).

The Applicants also used proteomic methods that had previously been used for studying surface exposed proteins in *Streptococcus pneumoniae* to identify 242 ORFs of *Alloiococcus otitidis* that share some homology with ORFs encoding surface exposed proteins on *Streptococcus pneumoniae* (see Table 9).

The Applicants also developed a HMM using approximately 70 known prokaryotic proteins containing the LPXTG cell wall sorting signal, in order to predict cell wall proteins that are anchored to the peptidoglycan layer (Mazmanian *et al.*, 1999; Navarre and Schneewind, 1999). The model used not only the LPXTG sequence, but also included two features of the downstream sequence; first the hydrophobic transmembrane domain and second, the positively charged carboxy-terminus (see Table 10).

A computer algorithm, called HMM Lipo, was developed by Applicant's assignee to predict lipoproteins using 131 biologically proven bacterial lipoproteins. The protein sequence from the start of the protein to the cysteine amino acid, plus the next two additional amino acids, were used to generate the HMM (Eddy, 1996) (see Table 11).

There are also a number of proteins that interact, non-covalently, with the peptidoglycan layer and are distinct from the LPXTG protein class described above. These proteins seem to have a consensus sequence at their carboxy terminus (Koebnik, 1995). The Applicants therefore developed and used a HMM of this region to identify
5 any *Alloiococcus otitidis* genome-encoded proteins that may fall into this class of proteins (see Table 12).

Proteins that contain Arg-Gly-Asp (RGD) attachment motif, together with integrins that serve as their receptor, constitute a major recognition system for cell adhesion, and thus are putative *Alloiococcus otitidis* cell surface antigens. RGD recognition is one
10 mechanism used by microbes to gain entry into eukaryotic tissues (Stockbauer *et al.*, 1999, Isberg and Nhieu, 1994). However, not all RGD-containing proteins mediate cell attachment. It has been demonstrated that RGD-containing peptides with a proline at the carboxy end (RDGP) are inactive in cell attachment assays (Pierschbacher and Rouslahti, 1987) and will be excluded from consideration. About 125 surface localized
15 ORFs were identified that were found to contain the peptide sequence RDGX where X is not proline (see Table 13).

ORFs whose BlastP results predict for proteins that may be involved in capsule biosynthesis and transport were also identified based on BlastP analysis. In addition, three potential capsule loci within the *Alloiococcus otitidis* genome were also identified
20 based BlastP analysis (see Tables 14 and 15).

BlastP analysis was also used to identify ORFs associated with sporulation in *Alloiococcus otitidis* (see Tables 16).

BlastP analysis of the *Alloiococcus otitidis* genomic sequence also resulted in the identification of 913 unique ORFs, or 653 unique Stop-Stop ORFs, that were shown to
25 have a BlastP 'E Value' of $> e^{-10}$ (see Table 17).

Three different ORF finder programs were also used to identify ORFs encoding polypeptides that could potentially be used in immunogenic compositions. Using the Glimmer™ ORF finder program 1530 ORFs were identified (see Table 18). Using the GeneMark™ ORF finder program 1536 ORFs were identified (see Table 19). The
30 Applicants also identified 2343 ORFs using the ORF finder program of Applicant's assignee, which searches for one of the three potential Start codons between a Stop-Stop regions. It first looks for a 'ATG' Start codon but will accept either a 'GTG' or 'TTG' Start codon if found first (see Table 20). The Applicants' assignee's ORF finder program

also detected 615 ORFs containing putative transmembrane regions. The program searches for putative transmembrane regions between two Stop codons and a Start codon immediately upstream of this region (see Table 21).

5 The entire genomic sequence of the isolated *Alloiococcus otitidis* is set out in Seq. ID No. 6651. *Alloiococcus otitidis* ORFs encoding proteins/polypeptides that are contained within this genomic sequence can also be used in immunogenic compositions.

A complete listing of all the ORFs of *Alloiococcus otitidis* based on the above characteristics, and which are used in immunogenic compositions, is set out in Table 2.

10 In addition, Tables 3-21 represent 19 groups into which the ORFs identified according to the above characteristics of present invention have been classified. Thus, all of the groups described below are ORFs comprised within the *Alloiococcus otitidis* genome and identified as encoding putative surface localized polypeptides. These groups are not meant to limit the scope of the present invention, as analysis of additional
15 ORF characteristics is contemplated. These additional characteristics, e.g., RGD sequence, may serve to further expand the total number of ORF groupings or to parse the presently identified ORFs into more defined groups, broader groups, narrower groups or group subsets. In addition, some ORFs will meet the criteria of more than one category, and will therefore appear in more than one of the following groups.

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 1 | Seq. ID No. 1 | 1149 | 1146 | 280 | Seq. ID No. 2 |
| 2a | Seq. ID No. 3 | 2227 | 2143 | 1271 | Seq. ID No. 4 |
| 2b | Seq. ID No. 5 | 2227 | 2203 | 1271 | Seq. ID No. 6 |
| 4a | Seq. ID No. 7 | 2827 | 3733 | 4152 | Seq. ID No. 8 |
| 4b | Seq. ID No. 9 | 2827 | 3049 | 4152 | Seq. ID No. 10 |
| 4c | Seq. ID No. 11 | 2827 | 2854 | 4152 | Seq. ID No. 12 |
| 5 | Seq. ID No. 13 | 5020 | 5011 | 4295 | Seq. ID No. 14 |
| 7 | Seq. ID No. 15 | 5792 | 5780 | 5001 | Seq. ID No. 16 |
| 10 | Seq. ID No. 17 | 7828 | 7807 | 5783 | Seq. ID No. 18 |
| 11 | Seq. ID No. 19 | 6198 | 6216 | 6449 | Seq. ID No. 20 |
| 13a | Seq. ID No. 21 | 6900 | 6879 | 6589 | Seq. ID No. 22 |
| 16 | Seq. ID No. 23 | 7100 | 7139 | 7390 | Seq. ID No. 24 |
| 17 | Seq. ID No. 25 | 8265 | 8247 | 7804 | Seq. ID No. 26 |
| 18 | Seq. ID No. 27 | 9571 | 9517 | 8210 | Seq. ID No. 28 |
| 20 | Seq. ID No. 29 | 10605 | 10605 | 9514 | Seq. ID No. 30 |
| 21b | Seq. ID No. 31 | 9485 | 9497 | 9793 | Seq. ID No. 32 |
| 23a | Seq. ID No. 33 | 11845 | 11374 | 10595 | Seq. ID No. 34 |
| 23b | Seq. ID No. 35 | 11845 | 11830 | 10595 | Seq. ID No. 36 |
| 24 | Seq. ID No. 37 | 12908 | 12905 | 11823 | Seq. ID No. 38 |
| 32 | Seq. ID No. 39 | 15875 | 15875 | 15789 | Seq. ID No. 40 |
| 36 | Seq. ID No. 41 | 19431 | 19386 | 18634 | Seq. ID No. 42 |
| 37 | Seq. ID No. 43 | 19372 | 19429 | 20076 | Seq. ID No. 44 |
| 38a | Seq. ID No. 45 | 21796 | 21769 | 20186 | Seq. ID No. 46 |
| 38b | Seq. ID No. 47 | 21796 | 21772 | 20186 | Seq. ID No. 48 |
| 39a | Seq. ID No. 49 | 22265 | 22238 | 21786 | Seq. ID No. 50 |
| 39b | Seq. ID No. 51 | 22265 | 22262 | 21786 | Seq. ID No. 52 |
| 40 | Seq. ID No. 53 | 23449 | 23437 | 22238 | Seq. ID No. 54 |
| 41a | Seq. ID No. 55 | 24645 | 24183 | 23434 | Seq. ID No. 56 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 41b | Seq. ID No. 57 | 24645 | 24402 | 23434 | Seq. ID No. 58 |
| 41c | Seq. ID No. 59 | 24645 | 24630 | 23434 | Seq. ID No. 60 |
| 43b | Seq. ID No. 61 | 25392 | 25353 | 24997 | Seq. ID No. 62 |
| 43c | Seq. ID No. 63 | 25392 | 25359 | 24997 | Seq. ID No. 64 |
| 44a | Seq. ID No. 65 | 25001 | 25028 | 25330 | Seq. ID No. 66 |
| 44b | Seq. ID No. 67 | 25001 | 25016 | 25330 | Seq. ID No. 68 |
| 45 | Seq. ID No. 69 | 25702 | 25654 | 25403 | Seq. ID No. 70 |
| 46a | Seq. ID No. 71 | 26225 | 26141 | 25800 | Seq. ID No. 72 |
| 46b | Seq. ID No. 73 | 26225 | 26153 | 25800 | Seq. ID No. 74 |
| 47 | Seq. ID No. 75 | 27661 | 27643 | 26195 | Seq. ID No. 76 |
| 48a | Seq. ID No. 77 | 29105 | 28781 | 27696 | Seq. ID No. 78 |
| 48b | Seq. ID No. 79 | 29105 | 28973 | 27696 | Seq. ID No. 80 |
| 48c | Seq. ID No. 81 | 29105 | 29090 | 27696 | Seq. ID No. 82 |
| 50 | Seq. ID No. 83 | 30169 | 30154 | 29102 | Seq. ID No. 84 |
| 51a | Seq. ID No. 85 | 31759 | 31072 | 30353 | Seq. ID No. 86 |
| 51b | Seq. ID No. 87 | 31759 | 31693 | 30353 | Seq. ID No. 88 |
| 51c | Seq. ID No. 89 | 31759 | 31741 | 30353 | Seq. ID No. 90 |
| 55 | Seq. ID No. 91 | 32149 | 32128 | 31895 | Seq. ID No. 92 |
| 56b | Seq. ID No. 93 | 32234 | 32231 | 31968 | Seq. ID No. 94 |
| 57a | Seq. ID No. 95 | 33738 | 33723 | 32455 | Seq. ID No. 96 |
| 57b | Seq. ID No. 97 | 33738 | 33732 | 32455 | Seq. ID No. 98 |
| 58 | Seq. ID No. 99 | 32611 | 32644 | 32934 | Seq. ID No. 100 |
| 60a | Seq. ID No. 101 | 34825 | 34786 | 33947 | Seq. ID No. 102 |
| 60b | Seq. ID No. 103 | 34825 | 34804 | 33947 | Seq. ID No. 104 |
| 61 | Seq. ID No. 105 | 34344 | 34344 | 34751 | Seq. ID No. 106 |
| 62a | Seq. ID No. 107 | 36496 | 36334 | 34877 | Seq. ID No. 108 |
| 62b | Seq. ID No. 109 | 36496 | 36415 | 34877 | Seq. ID No. 110 |
| 62c | Seq. ID No. 111 | 36496 | 36484 | 34877 | Seq. ID No. 112 |
| 63a | Seq. ID No. 113 | 35069 | 35102 | 35563 | Seq. ID No. 114 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 63b | Seq. ID No. 115 | 35069 | 35072 | 35563 | Seq. ID No. 116 |
| 65a | Seq. ID No. 117 | 37245 | 37158 | 36634 | Seq. ID No. 118 |
| 65b | Seq. ID No. 119 | 37245 | 37203 | 36634 | Seq. ID No. 120 |
| 65c | Seq. ID No. 121 | 37245 | 37242 | 36634 | Seq. ID No. 122 |
| 66a | Seq. ID No. 123 | 36563 | 36749 | 37030 | Seq. ID No. 124 |
| 67 | Seq. ID No. 125 | 37706 | 37694 | 37254 | Seq. ID No. 126 |
| 69 | Seq. ID No. 127 | 38141 | 38078 | 37803 | Seq. ID No. 128 |
| 71 | Seq. ID No. 129 | 37829 | 37862 | 38722 | Seq. ID No. 130 |
| 73a | Seq. ID No. 131 | 39233 | 39248 | 39472 | Seq. ID No. 132 |
| 73b | Seq. ID No. 133 | 39233 | 39245 | 39472 | Seq. ID No. 134 |
| 74 | Seq. ID No. 135 | 38701 | 38719 | 40068 | Seq. ID No. 136 |
| 77 | Seq. ID No. 137 | 40223 | 40232 | 41029 | Seq. ID No. 138 |
| 79 | Seq. ID No. 139 | 41098 | 41098 | 41607 | Seq. ID No. 140 |
| 80a | Seq. ID No. 141 | 41294 | 41375 | 41902 | Seq. ID No. 142 |
| 80b | Seq. ID No. 143 | 41294 | 41354 | 41902 | Seq. ID No. 144 |
| 80c | Seq. ID No. 145 | 41294 | 41300 | 41902 | Seq. ID No. 146 |
| 81a | Seq. ID No. 147 | 42667 | 42658 | 42107 | Seq. ID No. 148 |
| 81b | Seq. ID No. 149 | 42667 | 42664 | 42107 | Seq. ID No. 150 |
| 83 | Seq. ID No. 151 | 42875 | 42875 | 43096 | Seq. ID No. 152 |
| 85a | Seq. ID No. 153 | 43769 | 43976 | 44563 | Seq. ID No. 154 |
| 85b | Seq. ID No. 155 | 43769 | 43829 | 44563 | Seq. ID No. 156 |
| 85c | Seq. ID No. 157 | 43769 | 43811 | 44563 | Seq. ID No. 158 |
| 86 | Seq. ID No. 159 | 44846 | 44825 | 44592 | Seq. ID No. 160 |
| 87a | Seq. ID No. 161 | 45417 | 45315 | 45064 | Seq. ID No. 162 |
| 87b | Seq. ID No. 163 | 45417 | 45351 | 45064 | Seq. ID No. 164 |
| 87c | Seq. ID No. 165 | 45417 | 45402 | 45064 | Seq. ID No. 166 |
| 88 | Seq. ID No. 167 | 44548 | 44560 | 45258 | Seq. ID No. 168 |
| 89 | Seq. ID No. 169 | 45592 | 45550 | 45296 | Seq. ID No. 170 |
| 91a | Seq. ID No. 171 | 45068 | 45278 | 46252 | Seq. ID No. 172 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 91b | Seq. ID No. 173 | 45068 | 45194 | 46252 | Seq. ID No. 174 |
| 91c | Seq. ID No. 175 | 45068 | 45107 | 46252 | Seq. ID No. 176 |
| 91d | Seq. ID No. 177 | 45068 | 45074 | 46252 | Seq. ID No. 178 |
| 93a | Seq. ID No. 179 | 46421 | 46619 | 47563 | Seq. ID No. 180 |
| 93b | Seq. ID No. 181 | 46421 | 46454 | 47563 | Seq. ID No. 182 |
| 93c | Seq. ID No. 183 | 46421 | 46436 | 47563 | Seq. ID No. 184 |
| 94 | Seq. ID No. 185 | 47630 | 47630 | 47830 | Seq. ID No. 186 |
| 95b | Seq. ID No. 187 | 48482 | 48413 | 47895 | Seq. ID No. 188 |
| 97b | Seq. ID No. 189 | 48738 | 48723 | 48421 | Seq. ID No. 190 |
| 99 | Seq. ID No. 191 | 50295 | 50280 | 48739 | Seq. ID No. 192 |
| 101 | Seq. ID No. 193 | 49736 | 49766 | 50266 | Seq. ID No. 194 |
| 102 | Seq. ID No. 195 | 51996 | 51981 | 50311 | Seq. ID No. 196 |
| 104a | Seq. ID No. 197 | 52783 | 52738 | 52130 | Seq. ID No. 198 |
| 104b | Seq. ID No. 199 | 52783 | 52753 | 52130 | Seq. ID No. 200 |
| 104c | Seq. ID No. 201 | 52783 | 52780 | 52130 | Seq. ID No. 202 |
| 105a | Seq. ID No. 203 | 53486 | 53087 | 52710 | Seq. ID No. 204 |
| 105b | Seq. ID No. 205 | 53486 | 53375 | 52710 | Seq. ID No. 206 |
| 106 | Seq. ID No. 207 | 53716 | 53695 | 53102 | Seq. ID No. 208 |
| 109a | Seq. ID No. 209 | 54828 | 54606 | 53938 | Seq. ID No. 210 |
| 109b | Seq. ID No. 211 | 54828 | 54780 | 53938 | Seq. ID No. 212 |
| 109c | Seq. ID No. 213 | 54828 | 54807 | 53938 | Seq. ID No. 214 |
| 109d | Seq. ID No. 215 | 54828 | 54825 | 53938 | Seq. ID No. 216 |
| 111a | Seq. ID No. 217 | 55748 | 55580 | 54822 | Seq. ID No. 218 |
| 111b | Seq. ID No. 219 | 55748 | 55748 | 54822 | Seq. ID No. 220 |
| 112a | Seq. ID No. 221 | 56518 | 56494 | 55745 | Seq. ID No. 222 |
| 112b | Seq. ID No. 223 | 56518 | 56503 | 55745 | Seq. ID No. 224 |
| 114 | Seq. ID No. 225 | 57489 | 57459 | 56506 | Seq. ID No. 226 |
| 115 | Seq. ID No. 227 | 57509 | 57536 | 58264 | Seq. ID No. 228 |
| 119a | Seq. ID No. 229 | 58330 | 58573 | 59388 | Seq. ID No. 230 |

TABLE 2: ALL CLAIMED ORFS

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 119b | Seq. ID No. 231 | 58330 | 58354 | 59388 | Seq. ID No. 232 |
| 121 | Seq. ID No. 233 | 59528 | 59540 | 60505 | Seq. ID No. 234 |
| 124a | Seq. ID No. 235 | 60496 | 61084 | 62028 | Seq. ID No. 236 |
| 124b | Seq. ID No. 237 | 60496 | 60913 | 62028 | Seq. ID No. 238 |
| 124c | Seq. ID No. 239 | 60496 | 60502 | 62028 | Seq. ID No. 240 |
| 125 | Seq. ID No. 241 | 62724 | 62700 | 62170 | Seq. ID No. 242 |
| 127a | Seq. ID No. 243 | 63580 | 63556 | 62900 | Seq. ID No. 244 |
| 127b | Seq. ID No. 245 | 63580 | 63559 | 62900 | Seq. ID No. 246 |
| 127c | Seq. ID No. 247 | 63580 | 63565 | 62900 | Seq. ID No. 248 |
| 129a | Seq. ID No. 249 | 65731 | 64381 | 63731 | Seq. ID No. 250 |
| 129b | Seq. ID No. 251 | 65731 | 64777 | 63731 | Seq. ID No. 252 |
| 129c | Seq. ID No. 253 | 65731 | 65728 | 63731 | Seq. ID No. 254 |
| 132a | Seq. ID No. 255 | 64857 | 64902 | 65162 | Seq. ID No. 256 |
| 132b | Seq. ID No. 257 | 64857 | 64875 | 65162 | Seq. ID No. 258 |
| 132c | Seq. ID No. 259 | 64857 | 64860 | 65162 | Seq. ID No. 260 |
| 134 | Seq. ID No. 261 | 66670 | 66667 | 65753 | Seq. ID No. 262 |
| 135a | Seq. ID No. 263 | 67444 | 67423 | 66671 | Seq. ID No. 264 |
| 135b | Seq. ID No. 265 | 67444 | 67444 | 66671 | Seq. ID No. 266 |
| 137a | Seq. ID No. 267 | 68103 | 68073 | 67597 | Seq. ID No. 268 |
| 137b | Seq. ID No. 269 | 68103 | 68100 | 67597 | Seq. ID No. 270 |
| 138a | Seq. ID No. 271 | 70062 | 69996 | 68104 | Seq. ID No. 272 |
| 138b | Seq. ID No. 273 | 70062 | 70032 | 68104 | Seq. ID No. 274 |
| 142 | Seq. ID No. 275 | 70135 | 70213 | 70539 | Seq. ID No. 276 |
| 143 | Seq. ID No. 277 | 71697 | 71697 | 70765 | Seq. ID No. 278 |
| 144a | Seq. ID No. 279 | 72593 | 72506 | 71721 | Seq. ID No. 280 |
| 144b | Seq. ID No. 281 | 72593 | 72545 | 71721 | Seq. ID No. 282 |
| 144c | Seq. ID No. 283 | 72593 | 72563 | 71721 | Seq. ID No. 284 |
| 145a | Seq. ID No. 285 | 74289 | 72996 | 72706 | Seq. ID No. 286 |
| 145b | Seq. ID No. 287 | 74289 | 73896 | 72706 | Seq. ID No. 288 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 145c | Seq. ID No. 289 | 74289 | 74157 | 72706 | Seq. ID No. 290 |
| 145d | Seq. ID No. 291 | 74289 | 74226 | 72706 | Seq. ID No. 292 |
| 147 | Seq. ID No. 293 | 74501 | 74504 | 75694 | Seq. ID No. 294 |
| 151a | Seq. ID No. 295 | 77145 | 77184 | 78218 | Seq. ID No. 296 |
| 151b | Seq. ID No. 297 | 77145 | 77163 | 78218 | Seq. ID No. 298 |
| 152a | Seq. ID No. 299 | 78163 | 78220 | 78813 | Seq. ID No. 300 |
| 152b | Seq. ID No. 301 | 78163 | 78166 | 78813 | Seq. ID No. 302 |
| 153a | Seq. ID No. 303 | 78814 | 79048 | 80013 | Seq. ID No. 304 |
| 153b | Seq. ID No. 305 | 78814 | 78973 | 80013 | Seq. ID No. 306 |
| 153c | Seq. ID No. 307 | 78814 | 78835 | 80013 | Seq. ID No. 308 |
| 154 | Seq. ID No. 309 | 80014 | 80020 | 80496 | Seq. ID No. 310 |
| 155a | Seq. ID No. 311 | 82026 | 81981 | 80719 | Seq. ID No. 312 |
| 155b | Seq. ID No. 313 | 82026 | 82014 | 80719 | Seq. ID No. 314 |
| 157a | Seq. ID No. 315 | 82976 | 82856 | 82566 | Seq. ID No. 316 |
| 157b | Seq. ID No. 317 | 82976 | 82958 | 82566 | Seq. ID No. 318 |
| 158a | Seq. ID No. 319 | 83433 | 83400 | 82972 | Seq. ID No. 320 |
| 158b | Seq. ID No. 321 | 83433 | 83415 | 82972 | Seq. ID No. 322 |
| 160a | Seq. ID No. 323 | 84411 | 84378 | 83584 | Seq. ID No. 324 |
| 160b | Seq. ID No. 325 | 84411 | 84408 | 83584 | Seq. ID No. 326 |
| 162a | Seq. ID No. 327 | 85333 | 84958 | 84479 | Seq. ID No. 328 |
| 162b | Seq. ID No. 329 | 85333 | 85117 | 84479 | Seq. ID No. 330 |
| 162c | Seq. ID No. 331 | 85333 | 85276 | 84479 | Seq. ID No. 332 |
| 162d | Seq. ID No. 333 | 85333 | 85285 | 84479 | Seq. ID No. 334 |
| 162e | Seq. ID No. 335 | 85333 | 85309 | 84479 | Seq. ID No. 336 |
| 163 | Seq. ID No. 337 | 84597 | 84609 | 85145 | Seq. ID No. 338 |
| 164 | Seq. ID No. 339 | 84797 | 84812 | 85264 | Seq. ID No. 340 |
| 165a | Seq. ID No. 341 | 86252 | 86144 | 85266 | Seq. ID No. 342 |
| 165b | Seq. ID No. 343 | 86252 | 86150 | 85266 | Seq. ID No. 344 |
| 167 | Seq. ID No. 345 | 86974 | 86959 | 86120 | Seq. ID No. 346 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 169 | Seq. ID No. 347 | 86178 | 86193 | 86720 | Seq. ID No. 348 |
| 170 | Seq. ID No. 349 | 86757 | 86790 | 87047 | Seq. ID No. 350 |
| 171a | Seq. ID No. 351 | 87777 | 87717 | 87316 | Seq. ID No. 352 |
| 171b | Seq. ID No. 353 | 87777 | 87762 | 87316 | Seq. ID No. 354 |
| 172 | Seq. ID No. 355 | 88726 | 88726 | 87785 | Seq. ID No. 356 |
| 173 | Seq. ID No. 357 | 87518 | 87560 | 87805 | Seq. ID No. 358 |
| 174 | Seq. ID No. 359 | 87942 | 87969 | 88196 | Seq. ID No. 360 |
| 175 | Seq. ID No. 361 | 89206 | 89194 | 88793 | Seq. ID No. 362 |
| 176 | Seq. ID No. 363 | 89592 | 89589 | 89224 | Seq. ID No. 364 |
| 177a | Seq. ID No. 365 | 90825 | 90801 | 90136 | Seq. ID No. 366 |
| 177b | Seq. ID No. 367 | 90825 | 90816 | 90136 | Seq. ID No. 368 |
| 179a | Seq. ID No. 369 | 90536 | 90599 | 90823 | Seq. ID No. 370 |
| 179b | Seq. ID No. 371 | 90536 | 90596 | 90823 | Seq. ID No. 372 |
| 180a | Seq. ID No. 373 | 92164 | 91072 | 90845 | Seq. ID No. 374 |
| 180b | Seq. ID No. 375 | 92164 | 92155 | 90845 | Seq. ID No. 376 |
| 183a | Seq. ID No. 377 | 91563 | 91608 | 91928 | Seq. ID No. 378 |
| 184 | Seq. ID No. 379 | 92612 | 92597 | 92160 | Seq. ID No. 380 |
| 185 | Seq. ID No. 381 | 92821 | 92821 | 92630 | Seq. ID No. 382 |
| 186 | Seq. ID No. 383 | 93331 | 93328 | 92825 | Seq. ID No. 384 |
| 187a | Seq. ID No. 385 | 92661 | 92706 | 93110 | Seq. ID No. 386 |
| 187b | Seq. ID No. 387 | 92661 | 92670 | 93110 | Seq. ID No. 388 |
| 188 | Seq. ID No. 389 | 93727 | 93718 | 93350 | Seq. ID No. 390 |
| 189b | Seq. ID No. 391 | 94349 | 94319 | 93780 | Seq. ID No. 392 |
| 191b | Seq. ID No. 393 | 93850 | 93877 | 94344 | Seq. ID No. 394 |
| 192a | Seq. ID No. 395 | 94748 | 94742 | 94350 | Seq. ID No. 396 |
| 192b | Seq. ID No. 397 | 94748 | 94748 | 94350 | Seq. ID No. 398 |
| 193 | Seq. ID No. 399 | 94912 | 94912 | 94739 | Seq. ID No. 400 |
| 194a | Seq. ID No. 401 | 94489 | 94528 | 94773 | Seq. ID No. 402 |
| 194b | Seq. ID No. 403 | 94489 | 94516 | 94773 | Seq. ID No. 404 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 195 | Seq. ID No. 405 | 95581 | 95527 | 94988 | Seq. ID No. 406 |
| 196 | Seq. ID No. 407 | 94854 | 94875 | 95147 | Seq. ID No. 408 |
| 197a | Seq. ID No. 409 | 95874 | 95862 | 95560 | Seq. ID No. 410 |
| 197b | Seq. ID No. 411 | 95874 | 95871 | 95560 | Seq. ID No. 412 |
| 198a | Seq. ID No. 413 | 96273 | 96237 | 95890 | Seq. ID No. 414 |
| 198b | Seq. ID No. 415 | 96273 | 96258 | 95890 | Seq. ID No. 416 |
| 200 | Seq. ID No. 417 | 96560 | 96557 | 96294 | Seq. ID No. 418 |
| 201a | Seq. ID No. 419 | 96178 | 96340 | 96564 | Seq. ID No. 420 |
| 202 | Seq. ID No. 421 | 96786 | 96786 | 96592 | Seq. ID No. 422 |
| 203 | Seq. ID No. 423 | 97210 | 97207 | 96776 | Seq. ID No. 424 |
| 204 | Seq. ID No. 425 | 97870 | 97867 | 97211 | Seq. ID No. 426 |
| 205 | Seq. ID No. 427 | 98245 | 98227 | 97871 | Seq. ID No. 428 |
| 206 | Seq. ID No. 429 | 98536 | 98524 | 98249 | Seq. ID No. 430 |
| 207 | Seq. ID No. 431 | 98031 | 98031 | 98282 | Seq. ID No. 432 |
| 208a | Seq. ID No. 433 | 99436 | 99367 | 98567 | Seq. ID No. 434 |
| 208b | Seq. ID No. 435 | 99436 | 99412 | 98567 | Seq. ID No. 436 |
| 210 | Seq. ID No. 437 | 99792 | 99738 | 99445 | Seq. ID No. 438 |
| 211 | Seq. ID No. 439 | 100364 | 100361 | 99738 | Seq. ID No. 440 |
| 213 | Seq. ID No. 441 | 101050 | 101020 | 100388 | Seq. ID No. 442 |
| 215a | Seq. ID No. 443 | 101510 | 101444 | 101058 | Seq. ID No. 444 |
| 218 | Seq. ID No. 445 | 102897 | 102885 | 102442 | Seq. ID No. 446 |
| 219 | Seq. ID No. 447 | 104259 | 104244 | 103060 | Seq. ID No. 448 |
| 220a | Seq. ID No. 449 | 106476 | 106326 | 104386 | Seq. ID No. 450 |
| 220b | Seq. ID No. 451 | 106476 | 106428 | 104386 | Seq. ID No. 452 |
| 220c | Seq. ID No. 453 | 106476 | 106476 | 104386 | Seq. ID No. 454 |
| 223a | Seq. ID No. 455 | 105032 | 105092 | 105457 | Seq. ID No. 456 |
| 223b | Seq. ID No. 457 | 105032 | 105065 | 105457 | Seq. ID No. 458 |
| 226a | Seq. ID No. 459 | 107077 | 106960 | 106580 | Seq. ID No. 460 |
| 226b | Seq. ID No. 461 | 107077 | 107050 | 106580 | Seq. ID No. 462 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 227 | Seq. ID No. 463 | 107524 | 107506 | 107096 | Seq. ID No. 464 |
| 228a | Seq. ID No. 465 | 111563 | 111203 | 107883 | Seq. ID No. 466 |
| 228b | Seq. ID No. 467 | 111563 | 111269 | 107883 | Seq. ID No. 468 |
| 228c | Seq. ID No. 469 | 111563 | 111461 | 107883 | Seq. ID No. 470 |
| 228d | Seq. ID No. 471 | 111563 | 111542 | 107883 | Seq. ID No. 472 |
| 232a | Seq. ID No. 473 | 108687 | 108723 | 109223 | Seq. ID No. 474 |
| 232b | Seq. ID No. 475 | 108687 | 108690 | 109223 | Seq. ID No. 476 |
| 235a | Seq. ID No. 477 | 110593 | 110707 | 111144 | Seq. ID No. 478 |
| 235b | Seq. ID No. 479 | 110593 | 110626 | 111144 | Seq. ID No. 480 |
| 236a | Seq. ID No. 481 | 115224 | 115071 | 111643 | Seq. ID No. 482 |
| 236b | Seq. ID No. 483 | 115224 | 115212 | 111643 | Seq. ID No. 484 |
| 236c | Seq. ID No. 485 | 115224 | 115221 | 111643 | Seq. ID No. 486 |
| 239a | Seq. ID No. 487 | 111971 | 112139 | 112507 | Seq. ID No. 488 |
| 239b | Seq. ID No. 489 | 111971 | 112097 | 112507 | Seq. ID No. 490 |
| 239c | Seq. ID No. 491 | 111971 | 112085 | 112507 | Seq. ID No. 492 |
| 240 | Seq. ID No. 493 | 112508 | 112601 | 112867 | Seq. ID No. 494 |
| 241 | Seq. ID No. 495 | 113123 | 113129 | 113374 | Seq. ID No. 496 |
| 245a | Seq. ID No. 497 | 116934 | 116292 | 115537 | Seq. ID No. 498 |
| 245b | Seq. ID No. 499 | 116934 | 116775 | 115537 | Seq. ID No. 500 |
| 245c | Seq. ID No. 501 | 116934 | 116895 | 115537 | Seq. ID No. 502 |
| 246a | Seq. ID No. 503 | 118257 | 118056 | 117070 | Seq. ID No. 504 |
| 246b | Seq. ID No. 505 | 118257 | 118245 | 117070 | Seq. ID No. 506 |
| 247 | Seq. ID No. 507 | 117578 | 117584 | 118102 | Seq. ID No. 508 |
| 248a | Seq. ID No. 509 | 119490 | 119358 | 118264 | Seq. ID No. 510 |
| 248b | Seq. ID No. 511 | 119490 | 119478 | 118264 | Seq. ID No. 512 |
| 249a | Seq. ID No. 513 | 121252 | 121225 | 119774 | Seq. ID No. 514 |
| 249b | Seq. ID No. 515 | 121252 | 121252 | 119774 | Seq. ID No. 516 |
| 251 | Seq. ID No. 517 | 122162 | 122150 | 121326 | Seq. ID No. 518 |
| 253a | Seq. ID No. 519 | 122435 | 122387 | 122163 | Seq. ID No. 520 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 253b | Seq. ID No. 521 | 122435 | 122432 | 122163 | Seq. ID No. 522 |
| 254 | Seq. ID No. 523 | 123069 | 123045 | 122416 | Seq. ID No. 524 |
| 255a | Seq. ID No. 525 | 124654 | 123817 | 123116 | Seq. ID No. 526 |
| 255b | Seq. ID No. 527 | 124654 | 124408 | 123116 | Seq. ID No. 528 |
| 255c | Seq. ID No. 529 | 124654 | 124639 | 123116 | Seq. ID No. 530 |
| 255d | Seq. ID No. 531 | 124654 | 124645 | 123116 | Seq. ID No. 532 |
| 258 | Seq. ID No. 533 | 125557 | 125539 | 124658 | Seq. ID No. 534 |
| 259a | Seq. ID No. 535 | 126322 | 126256 | 125558 | Seq. ID No. 536 |
| 259b | Seq. ID No. 537 | 126322 | 126292 | 125558 | Seq. ID No. 538 |
| 259c | Seq. ID No. 539 | 126322 | 126298 | 125558 | Seq. ID No. 540 |
| 260 | Seq. ID No. 541 | 126904 | 126901 | 126533 | Seq. ID No. 542 |
| 262 | Seq. ID No. 543 | 127474 | 127474 | 126965 | Seq. ID No. 544 |
| 263a | Seq. ID No. 545 | 126519 | 126645 | 126968 | Seq. ID No. 546 |
| 263b | Seq. ID No. 547 | 126519 | 126603 | 126968 | Seq. ID No. 548 |
| 264b | Seq. ID No. 549 | 126969 | 127005 | 127382 | Seq. ID No. 550 |
| 265 | Seq. ID No. 551 | 128443 | 128389 | 127691 | Seq. ID No. 552 |
| 267b | Seq. ID No. 553 | 129002 | 128912 | 128487 | Seq. ID No. 554 |
| 267c | Seq. ID No. 555 | 129002 | 128996 | 128487 | Seq. ID No. 556 |
| 268 | Seq. ID No. 557 | 128485 | 128500 | 128733 | Seq. ID No. 558 |
| 269a | Seq. ID No. 559 | 129717 | 129609 | 129055 | Seq. ID No. 560 |
| 269b | Seq. ID No. 561 | 129717 | 129708 | 129055 | Seq. ID No. 562 |
| 271a | Seq. ID No. 563 | 131163 | 131118 | 129856 | Seq. ID No. 564 |
| 271b | Seq. ID No. 565 | 131163 | 131151 | 129856 | Seq. ID No. 566 |
| 273a | Seq. ID No. 567 | 133346 | 132791 | 131694 | Seq. ID No. 568 |
| 273b | Seq. ID No. 569 | 133346 | 133343 | 131694 | Seq. ID No. 570 |
| 277a | Seq. ID No. 571 | 135131 | 134891 | 134046 | Seq. ID No. 572 |
| 277b | Seq. ID No. 573 | 135131 | 135077 | 134046 | Seq. ID No. 574 |
| 277c | Seq. ID No. 575 | 135131 | 135119 | 134046 | Seq. ID No. 576 |
| 279a | Seq. ID No. 577 | 135434 | 135626 | 135994 | Seq. ID No. 578 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 279b | Seq. ID No. 579 | 135434 | 135437 | 135994 | Seq. ID No. 580 |
| 280a | Seq. ID No. 581 | 138094 | 137200 | 136100 | Seq. ID No. 582 |
| 280b | Seq. ID No. 583 | 138094 | 137593 | 136100 | Seq. ID No. 584 |
| 280c | Seq. ID No. 585 | 138094 | 137926 | 136100 | Seq. ID No. 586 |
| 280d | Seq. ID No. 587 | 138094 | 138052 | 136100 | Seq. ID No. 588 |
| 282 | Seq. ID No. 589 | 139430 | 139388 | 139116 | Seq. ID No. 590 |
| 283a | Seq. ID No. 591 | 138704 | 138719 | 139567 | Seq. ID No. 592 |
| 283b | Seq. ID No. 593 | 138704 | 138710 | 139567 | Seq. ID No. 594 |
| 284a | Seq. ID No. 595 | 139568 | 139592 | 140257 | Seq. ID No. 596 |
| 284b | Seq. ID No. 597 | 139568 | 139574 | 140257 | Seq. ID No. 598 |
| 285b | Seq. ID No. 599 | 141025 | 141022 | 140702 | Seq. ID No. 600 |
| 286a | Seq. ID No. 601 | 140271 | 140286 | 141035 | Seq. ID No. 602 |
| 286b | Seq. ID No. 603 | 140271 | 140277 | 141035 | Seq. ID No. 604 |
| 287 | Seq. ID No. 605 | 142180 | 142153 | 141284 | Seq. ID No. 606 |
| 290a | Seq. ID No. 607 | 142653 | 142590 | 142177 | Seq. ID No. 608 |
| 290b | Seq. ID No. 609 | 142653 | 142638 | 142177 | Seq. ID No. 610 |
| 293 | Seq. ID No. 611 | 142822 | 142855 | 143292 | Seq. ID No. 612 |
| 294 | Seq. ID No. 613 | 143980 | 143974 | 143411 | Seq. ID No. 614 |
| 296 | Seq. ID No. 615 | 146154 | 146151 | 143974 | Seq. ID No. 616 |
| 297 | Seq. ID No. 617 | 144242 | 144227 | 143988 | Seq. ID No. 618 |
| 300b | Seq. ID No. 619 | 145417 | 145420 | 145899 | Seq. ID No. 620 |
| 301a | Seq. ID No. 621 | 147294 | 147237 | 146278 | Seq. ID No. 622 |
| 301b | Seq. ID No. 623 | 147294 | 147264 | 146278 | Seq. ID No. 624 |
| 304a | Seq. ID No. 625 | 149441 | 149135 | 147252 | Seq. ID No. 626 |
| 304b | Seq. ID No. 627 | 149441 | 149423 | 147252 | Seq. ID No. 628 |
| 307 | Seq. ID No. 629 | 149829 | 149781 | 149401 | Seq. ID No. 630 |
| 308 | Seq. ID No. 631 | 150040 | 150016 | 149783 | Seq. ID No. 632 |
| 309 | Seq. ID No. 633 | 149973 | 149973 | 150149 | Seq. ID No. 634 |
| 310 | Seq. ID No. 635 | 151326 | 151308 | 150298 | Seq. ID No. 636 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 311 | Seq. ID No. 637 | 153222 | 153168 | 151447 | Seq. ID No. 638 |
| 313a | Seq. ID No. 639 | 153970 | 153457 | 153188 | Seq. ID No. 640 |
| 313b | Seq. ID No. 641 | 153970 | 153496 | 153188 | Seq. ID No. 642 |
| 313c | Seq. ID No. 643 | 153970 | 153952 | 153188 | Seq. ID No. 644 |
| 313d | Seq. ID No. 645 | 153970 | 153955 | 153188 | Seq. ID No. 646 |
| 313e | Seq. ID No. 647 | 153970 | 153961 | 153188 | Seq. ID No. 648 |
| 315 | Seq. ID No. 649 | 154835 | 154826 | 153939 | Seq. ID No. 650 |
| 316a | Seq. ID No. 651 | 155263 | 155209 | 154826 | Seq. ID No. 652 |
| 317a | Seq. ID No. 653 | 155877 | 155646 | 155287 | Seq. ID No. 654 |
| 317b | Seq. ID No. 655 | 155877 | 155865 | 155287 | Seq. ID No. 656 |
| 318a | Seq. ID No. 657 | 157499 | 157280 | 156426 | Seq. ID No. 658 |
| 318b | Seq. ID No. 659 | 157499 | 157304 | 156426 | Seq. ID No. 660 |
| 318c | Seq. ID No. 661 | 157499 | 157367 | 156426 | Seq. ID No. 662 |
| 318d | Seq. ID No. 663 | 157499 | 157451 | 156426 | Seq. ID No. 664 |
| 318e | Seq. ID No. 665 | 157499 | 157460 | 156426 | Seq. ID No. 666 |
| 320 | Seq. ID No. 667 | 156670 | 156700 | 156975 | Seq. ID No. 668 |
| 321 | Seq. ID No. 669 | 158142 | 158139 | 157312 | Seq. ID No. 670 |
| 323a | Seq. ID No. 671 | 158413 | 158341 | 158129 | Seq. ID No. 672 |
| 323b | Seq. ID No. 673 | 158413 | 158395 | 158129 | Seq. ID No. 674 |
| 324 | Seq. ID No. 675 | 159203 | 159200 | 158373 | Seq. ID No. 676 |
| 327a | Seq. ID No. 677 | 159964 | 159682 | 159233 | Seq. ID No. 678 |
| 327b | Seq. ID No. 679 | 159964 | 159844 | 159233 | Seq. ID No. 680 |
| 327c | Seq. ID No. 681 | 159964 | 159937 | 159233 | Seq. ID No. 682 |
| 329 | Seq. ID No. 683 | 161034 | 161034 | 159934 | Seq. ID No. 684 |
| 330a | Seq. ID No. 685 | 161885 | 162272 | 163120 | Seq. ID No. 686 |
| 330b | Seq. ID No. 687 | 161885 | 161975 | 163120 | Seq. ID No. 688 |
| 330c | Seq. ID No. 689 | 161885 | 161888 | 163120 | Seq. ID No. 690 |
| 331 | Seq. ID No. 691 | 162945 | 162951 | 163187 | Seq. ID No. 692 |
| 332 | Seq. ID No. 693 | 163441 | 163441 | 163238 | Seq. ID No. 694 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 333 | Seq. ID No. 695 | 163242 | 163248 | 163478 | Seq. ID No. 696 |
| 334 | Seq. ID No. 697 | 163339 | 163339 | 163563 | Seq. ID No. 698 |
| 335a | Seq. ID No. 699 | 163139 | 163193 | 163786 | Seq. ID No. 700 |
| 335b | Seq. ID No. 701 | 163139 | 163178 | 163786 | Seq. ID No. 702 |
| 337 | Seq. ID No. 703 | 163774 | 163798 | 164847 | Seq. ID No. 704 |
| 338a | Seq. ID No. 705 | 164835 | 164961 | 165473 | Seq. ID No. 706 |
| 338b | Seq. ID No. 707 | 164835 | 164952 | 165473 | Seq. ID No. 708 |
| 338c | Seq. ID No. 709 | 164835 | 164889 | 165473 | Seq. ID No. 710 |
| 341a | Seq. ID No. 711 | 165550 | 165709 | 166422 | Seq. ID No. 712 |
| 341b | Seq. ID No. 713 | 165550 | 165550 | 166422 | Seq. ID No. 714 |
| 342a | Seq. ID No. 715 | 167866 | 166741 | 166517 | Seq. ID No. 716 |
| 342b | Seq. ID No. 717 | 167866 | 166810 | 166517 | Seq. ID No. 718 |
| 342c | Seq. ID No. 719 | 167866 | 166951 | 166517 | Seq. ID No. 720 |
| 342d | Seq. ID No. 721 | 167866 | 167164 | 166517 | Seq. ID No. 722 |
| 342e | Seq. ID No. 723 | 167866 | 167602 | 166517 | Seq. ID No. 724 |
| 342f | Seq. ID No. 725 | 167866 | 167791 | 166517 | Seq. ID No. 726 |
| 342g | Seq. ID No. 727 | 167866 | 167824 | 166517 | Seq. ID No. 728 |
| 342h | Seq. ID No. 729 | 167866 | 167857 | 166517 | Seq. ID No. 730 |
| 344a | Seq. ID No. 731 | 167906 | 167942 | 168580 | Seq. ID No. 732 |
| 344b | Seq. ID No. 733 | 167906 | 167918 | 168580 | Seq. ID No. 734 |
| 345 | Seq. ID No. 735 | 169267 | 169258 | 168590 | Seq. ID No. 736 |
| 346a | Seq. ID No. 737 | 169209 | 169296 | 169616 | Seq. ID No. 738 |
| 346b | Seq. ID No. 739 | 169209 | 169212 | 169616 | Seq. ID No. 740 |
| 347 | Seq. ID No. 741 | 170242 | 170227 | 169742 | Seq. ID No. 742 |
| 349a | Seq. ID No. 743 | 170547 | 170637 | 170948 | Seq. ID No. 744 |
| 349b | Seq. ID No. 745 | 170547 | 170559 | 170948 | Seq. ID No. 746 |
| 349c | Seq. ID No. 747 | 170547 | 170550 | 170948 | Seq. ID No. 748 |
| 350a | Seq. ID No. 749 | 171289 | 171334 | 172113 | Seq. ID No. 750 |
| 350b | Seq. ID No. 751 | 171289 | 171304 | 172113 | Seq. ID No. 752 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 351 | Seq. ID No. 753 | 172083 | 172116 | 172757 | Seq. ID No. 754 |
| 352a | Seq. ID No. 755 | 172736 | 173237 | 173545 | Seq. ID No. 756 |
| 352b | Seq. ID No. 757 | 172736 | 173222 | 173545 | Seq. ID No. 758 |
| 352c | Seq. ID No. 759 | 172736 | 172754 | 173545 | Seq. ID No. 760 |
| 354a | Seq. ID No. 761 | 173511 | 173913 | 174341 | Seq. ID No. 762 |
| 354b | Seq. ID No. 763 | 173511 | 173565 | 174341 | Seq. ID No. 764 |
| 354c | Seq. ID No. 765 | 173511 | 173535 | 174341 | Seq. ID No. 766 |
| 355 | Seq. ID No. 767 | 174702 | 174594 | 174361 | Seq. ID No. 768 |
| 356a | Seq. ID No. 769 | 174424 | 174847 | 175176 | Seq. ID No. 770 |
| 356b | Seq. ID No. 771 | 174424 | 174610 | 175176 | Seq. ID No. 772 |
| 356c | Seq. ID No. 773 | 174424 | 174538 | 175176 | Seq. ID No. 774 |
| 356d | Seq. ID No. 775 | 174424 | 174469 | 175176 | Seq. ID No. 776 |
| 358a | Seq. ID No. 777 | 175629 | 176586 | 176951 | Seq. ID No. 778 |
| 358b | Seq. ID No. 779 | 175629 | 175692 | 176951 | Seq. ID No. 780 |
| 358c | Seq. ID No. 781 | 175629 | 175653 | 176951 | Seq. ID No. 782 |
| 362 | Seq. ID No. 783 | 177179 | 177206 | 178258 | Seq. ID No. 784 |
| 365a | Seq. ID No. 785 | 178795 | 178840 | 179430 | Seq. ID No. 786 |
| 365b | Seq. ID No. 787 | 178795 | 178807 | 179430 | Seq. ID No. 788 |
| 366b | Seq. ID No. 789 | 179373 | 179436 | 180101 | Seq. ID No. 790 |
| 366c | Seq. ID No. 791 | 179373 | 179427 | 180101 | Seq. ID No. 792 |
| 367a | Seq. ID No. 793 | 181005 | 180984 | 180184 | Seq. ID No. 794 |
| 367b | Seq. ID No. 795 | 181005 | 181002 | 180184 | Seq. ID No. 796 |
| 371a | Seq. ID No. 797 | 181201 | 181216 | 181662 | Seq. ID No. 798 |
| 371b | Seq. ID No. 799 | 181201 | 181204 | 181662 | Seq. ID No. 800 |
| 372a | Seq. ID No. 801 | 184610 | 183770 | 181809 | Seq. ID No. 802 |
| 372b | Seq. ID No. 803 | 184610 | 184463 | 181809 | Seq. ID No. 804 |
| 372c | Seq. ID No. 805 | 184610 | 184562 | 181809 | Seq. ID No. 806 |
| 372d | Seq. ID No. 807 | 184610 | 184598 | 181809 | Seq. ID No. 808 |
| 374 | Seq. ID No. 809 | 182287 | 182368 | 182628 | Seq. ID No. 810 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 377a | Seq. ID No. 811 | 183658 | 183769 | 184497 | Seq. ID No. 812 |
| 377b | Seq. ID No. 813 | 183658 | 183682 | 184497 | Seq. ID No. 814 |
| 378a | Seq. ID No. 815 | 185701 | 185635 | 184616 | Seq. ID No. 816 |
| 378b | Seq. ID No. 817 | 185701 | 185677 | 184616 | Seq. ID No. 818 |
| 382b | Seq. ID No. 819 | 186504 | 186492 | 185782 | Seq. ID No. 820 |
| 383a | Seq. ID No. 821 | 188140 | 188092 | 187067 | Seq. ID No. 822 |
| 383b | Seq. ID No. 823 | 188140 | 188104 | 187067 | Seq. ID No. 824 |
| 384a | Seq. ID No. 825 | 189536 | 188333 | 188085 | Seq. ID No. 826 |
| 384b | Seq. ID No. 827 | 189536 | 189509 | 188085 | Seq. ID No. 828 |
| 385a | Seq. ID No. 829 | 190440 | 190362 | 189526 | Seq. ID No. 830 |
| 385b | Seq. ID No. 831 | 190440 | 190434 | 189526 | Seq. ID No. 832 |
| 386 | Seq. ID No. 833 | 190535 | 190535 | 190431 | Seq. ID No. 834 |
| 387 | Seq. ID No. 835 | 192036 | 192021 | 190792 | Seq. ID No. 836 |
| 390 | Seq. ID No. 837 | 192805 | 192781 | 192056 | Seq. ID No. 838 |
| 391 | Seq. ID No. 839 | 193828 | 193816 | 192968 | Seq. ID No. 840 |
| 393b | Seq. ID No. 841 | 193199 | 193205 | 193543 | Seq. ID No. 842 |
| 395a | Seq. ID No. 843 | 194052 | 194199 | 194792 | Seq. ID No. 844 |
| 395b | Seq. ID No. 845 | 194052 | 194088 | 194792 | Seq. ID No. 846 |
| 395c | Seq. ID No. 847 | 194052 | 194058 | 194792 | Seq. ID No. 848 |
| 396 | Seq. ID No. 849 | 194817 | 194817 | 195026 | Seq. ID No. 850 |
| 398 | Seq. ID No. 851 | 195036 | 195093 | 195338 | Seq. ID No. 852 |
| 400a | Seq. ID No. 853 | 195530 | 195740 | 196156 | Seq. ID No. 854 |
| 400b | Seq. ID No. 855 | 195530 | 195551 | 196156 | Seq. ID No. 856 |
| 401a | Seq. ID No. 857 | 197561 | 197516 | 196254 | Seq. ID No. 858 |
| 401b | Seq. ID No. 859 | 197561 | 197549 | 196254 | Seq. ID No. 860 |
| 403a | Seq. ID No. 861 | 200060 | 199496 | 198111 | Seq. ID No. 862 |
| 403b | Seq. ID No. 863 | 200060 | 199943 | 198111 | Seq. ID No. 864 |
| 403c | Seq. ID No. 865 | 200060 | 200000 | 198111 | Seq. ID No. 866 |
| 403d | Seq. ID No. 867 | 200060 | 200003 | 198111 | Seq. ID No. 868 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 406a | Seq. ID No. 869 | 201691 | 201646 | 200384 | Seq. ID No. 870 |
| 406b | Seq. ID No. 871 | 201691 | 201679 | 200384 | Seq. ID No. 872 |
| 409a | Seq. ID No. 873 | 203082 | 202980 | 202234 | Seq. ID No. 874 |
| 409b | Seq. ID No. 875 | 203082 | 203079 | 202234 | Seq. ID No. 876 |
| 410a | Seq. ID No. 877 | 205212 | 205185 | 203377 | Seq. ID No. 878 |
| 410b | Seq. ID No. 879 | 205212 | 205200 | 203377 | Seq. ID No. 880 |
| 410c | Seq. ID No. 881 | 205212 | 205209 | 203377 | Seq. ID No. 882 |
| 413a | Seq. ID No. 883 | 206260 | 205960 | 205544 | Seq. ID No. 884 |
| 413b | Seq. ID No. 885 | 206260 | 206224 | 205544 | Seq. ID No. 886 |
| 416a | Seq. ID No. 887 | 206529 | 206499 | 206266 | Seq. ID No. 888 |
| 416b | Seq. ID No. 889 | 206529 | 206529 | 206266 | Seq. ID No. 890 |
| 417 | Seq. ID No. 891 | 206866 | 206842 | 206519 | Seq. ID No. 892 |
| 418a | Seq. ID No. 893 | 208884 | 208674 | 206959 | Seq. ID No. 894 |
| 418b | Seq. ID No. 895 | 208884 | 208827 | 206959 | Seq. ID No. 896 |
| 419a | Seq. ID No. 897 | 210885 | 210405 | 209041 | Seq. ID No. 898 |
| 419b | Seq. ID No. 899 | 210885 | 210609 | 209041 | Seq. ID No. 900 |
| 419c | Seq. ID No. 901 | 210885 | 210864 | 209041 | Seq. ID No. 902 |
| 420a | Seq. ID No. 903 | 209648 | 209660 | 209893 | Seq. ID No. 904 |
| 420b | Seq. ID No. 905 | 209648 | 209657 | 209893 | Seq. ID No. 906 |
| 421 | Seq. ID No. 907 | 212336 | 212297 | 211083 | Seq. ID No. 908 |
| 422 | Seq. ID No. 909 | 211732 | 211765 | 211989 | Seq. ID No. 910 |
| 424a | Seq. ID No. 911 | 213555 | 213390 | 212911 | Seq. ID No. 912 |
| 424b | Seq. ID No. 913 | 213555 | 213522 | 212911 | Seq. ID No. 914 |
| 424c | Seq. ID No. 915 | 213555 | 213525 | 212911 | Seq. ID No. 916 |
| 426a | Seq. ID No. 917 | 213625 | 213637 | 213936 | Seq. ID No. 918 |
| 426b | Seq. ID No. 919 | 213625 | 213631 | 213936 | Seq. ID No. 920 |
| 427a | Seq. ID No. 921 | 214643 | 214553 | 214074 | Seq. ID No. 922 |
| 427b | Seq. ID No. 923 | 214643 | 214589 | 214074 | Seq. ID No. 924 |
| 427c | Seq. ID No. 925 | 214643 | 214625 | 214074 | Seq. ID No. 926 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 429a | Seq. ID No. 927 | 215579 | 215441 | 214998 | Seq. ID No. 928 |
| 429b | Seq. ID No. 929 | 215579 | 215498 | 214998 | Seq. ID No. 930 |
| 429c | Seq. ID No. 931 | 215579 | 215540 | 214998 | Seq. ID No. 932 |
| 429d | Seq. ID No. 933 | 215579 | 215546 | 214998 | Seq. ID No. 934 |
| 431 | Seq. ID No. 935 | 216192 | 216192 | 215455 | Seq. ID No. 936 |
| 434 | Seq. ID No. 937 | 215861 | 215876 | 216112 | Seq. ID No. 938 |
| 435 | Seq. ID No. 939 | 217111 | 217093 | 216281 | Seq. ID No. 940 |
| 437b | Seq. ID No. 941 | 216993 | 216987 | 216646 | Seq. ID No. 942 |
| 437c | Seq. ID No. 943 | 216993 | 216993 | 216646 | Seq. ID No. 944 |
| 438a | Seq. ID No. 945 | 218376 | 218307 | 217327 | Seq. ID No. 946 |
| 438b | Seq. ID No. 947 | 218376 | 218352 | 217327 | Seq. ID No. 948 |
| 438c | Seq. ID No. 949 | 218376 | 218376 | 217327 | Seq. ID No. 950 |
| 440 | Seq. ID No. 951 | 219614 | 219608 | 218307 | Seq. ID No. 952 |
| 441a | Seq. ID No. 953 | 221512 | 221416 | 219605 | Seq. ID No. 954 |
| 441b | Seq. ID No. 955 | 221512 | 221491 | 219605 | Seq. ID No. 956 |
| 443b | Seq. ID No. 957 | 220467 | 220509 | 220775 | Seq. ID No. 958 |
| 444a | Seq. ID No. 959 | 222225 | 222198 | 221506 | Seq. ID No. 960 |
| 444b | Seq. ID No. 961 | 222225 | 222213 | 221506 | Seq. ID No. 962 |
| 445a | Seq. ID No. 963 | 222816 | 222783 | 222292 | Seq. ID No. 964 |
| 445b | Seq. ID No. 965 | 222816 | 222801 | 222292 | Seq. ID No. 966 |
| 448 | Seq. ID No. 967 | 223126 | 223156 | 224475 | Seq. ID No. 968 |
| 450a | Seq. ID No. 969 | 224457 | 224481 | 225266 | Seq. ID No. 970 |
| 450b | Seq. ID No. 971 | 224457 | 224469 | 225266 | Seq. ID No. 972 |
| 451a | Seq. ID No. 973 | 226352 | 226328 | 226101 | Seq. ID No. 974 |
| 451b | Seq. ID No. 975 | 226352 | 226331 | 226101 | Seq. ID No. 976 |
| 452a | Seq. ID No. 977 | 225232 | 225328 | 226530 | Seq. ID No. 978 |
| 452b | Seq. ID No. 979 | 225232 | 225295 | 226530 | Seq. ID No. 980 |
| 452c | Seq. ID No. 981 | 225232 | 225256 | 226530 | Seq. ID No. 982 |
| 452d | Seq. ID No. 983 | 225232 | 225247 | 226530 | Seq. ID No. 984 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 452e | Seq. ID No. 985 | 225232 | 225232 | 226530 | Seq. ID No. 986 |
| 454b | Seq. ID No. 987 | 227703 | 227703 | 227224 | Seq. ID No. 988 |
| 455a | Seq. ID No. 989 | 226615 | 226738 | 227742 | Seq. ID No. 990 |
| 455b | Seq. ID No. 991 | 226615 | 226693 | 227742 | Seq. ID No. 992 |
| 455c | Seq. ID No. 993 | 226615 | 226627 | 227742 | Seq. ID No. 994 |
| 458a | Seq. ID No. 995 | 227816 | 227936 | 229081 | Seq. ID No. 996 |
| 458b | Seq. ID No. 997 | 227816 | 227840 | 229081 | Seq. ID No. 998 |
| 460a | Seq. ID No. 999 | 229035 | 229098 | 229883 | Seq. ID No. 1000 |
| 460b | Seq. ID No. 1001 | 229035 | 229062 | 229883 | Seq. ID No. 1002 |
| 460c | Seq. ID No. 1003 | 229035 | 229053 | 229883 | Seq. ID No. 1004 |
| 462 | Seq. ID No. 1005 | 230230 | 230239 | 230679 | Seq. ID No. 1006 |
| 463a | Seq. ID No. 1007 | 230696 | 230720 | 231208 | Seq. ID No. 1008 |
| 463b | Seq. ID No. 1009 | 230696 | 230711 | 231208 | Seq. ID No. 1010 |
| 464a | Seq. ID No. 1011 | 233073 | 231831 | 231601 | Seq. ID No. 1012 |
| 464b | Seq. ID No. 1013 | 233073 | 232560 | 231601 | Seq. ID No. 1014 |
| 464c | Seq. ID No. 1015 | 233073 | 232890 | 231601 | Seq. ID No. 1016 |
| 464d | Seq. ID No. 1017 | 233073 | 233052 | 231601 | Seq. ID No. 1018 |
| 465b | Seq. ID No. 1019 | 232439 | 232433 | 232119 | Seq. ID No. 1020 |
| 467a | Seq. ID No. 1021 | 234505 | 234430 | 233069 | Seq. ID No. 1022 |
| 467b | Seq. ID No. 1023 | 234505 | 234472 | 233069 | Seq. ID No. 1024 |
| 471a | Seq. ID No. 1025 | 235904 | 235874 | 235617 | Seq. ID No. 1026 |
| 471b | Seq. ID No. 1027 | 235904 | 235898 | 235617 | Seq. ID No. 1028 |
| 472a | Seq. ID No. 1029 | 234562 | 235432 | 235953 | Seq. ID No. 1030 |
| 472b | Seq. ID No. 1031 | 234562 | 235294 | 235953 | Seq. ID No. 1032 |
| 472c | Seq. ID No. 1033 | 234562 | 234958 | 235953 | Seq. ID No. 1034 |
| 472d | Seq. ID No. 1035 | 234562 | 234805 | 235953 | Seq. ID No. 1036 |
| 472e | Seq. ID No. 1037 | 234562 | 234796 | 235953 | Seq. ID No. 1038 |
| 472f | Seq. ID No. 1039 | 234562 | 234574 | 235953 | Seq. ID No. 1040 |
| 473 | Seq. ID No. 1041 | 235954 | 235963 | 236619 | Seq. ID No. 1042 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 474 | Seq. ID No. 1043 | 237869 | 237851 | 236748 | Seq. ID No. 1044 |
| 476 | Seq. ID No. 1045 | 238557 | 238551 | 238282 | Seq. ID No. 1046 |
| 477b | Seq. ID No. 1047 | 239139 | 239133 | 238819 | Seq. ID No. 1048 |
| 478a | Seq. ID No. 1049 | 238145 | 238253 | 239143 | Seq. ID No. 1050 |
| 478b | Seq. ID No. 1051 | 238145 | 238208 | 239143 | Seq. ID No. 1052 |
| 479 | Seq. ID No. 1053 | 239300 | 239318 | 239719 | Seq. ID No. 1054 |
| 480a | Seq. ID No. 1055 | 241246 | 241159 | 239954 | Seq. ID No. 1056 |
| 480b | Seq. ID No. 1057 | 241246 | 241213 | 239954 | Seq. ID No. 1058 |
| 481a | Seq. ID No. 1059 | 242130 | 242112 | 241498 | Seq. ID No. 1060 |
| 481b | Seq. ID No. 1061 | 242130 | 242127 | 241498 | Seq. ID No. 1062 |
| 482a | Seq. ID No. 1063 | 242585 | 242540 | 242109 | Seq. ID No. 1064 |
| 482b | Seq. ID No. 1065 | 242585 | 242576 | 242109 | Seq. ID No. 1066 |
| 483 | Seq. ID No. 1067 | 243003 | 243000 | 242668 | Seq. ID No. 1068 |
| 490 | Seq. ID No. 1069 | 243146 | 243158 | 244378 | Seq. ID No. 1070 |
| 491a | Seq. ID No. 1071 | 244796 | 244763 | 244506 | Seq. ID No. 1072 |
| 491b | Seq. ID No. 1073 | 244796 | 244781 | 244506 | Seq. ID No. 1074 |
| 492 | Seq. ID No. 1075 | 245550 | 245511 | 244786 | Seq. ID No. 1076 |
| 494a | Seq. ID No. 1077 | 245120 | 245192 | 245554 | Seq. ID No. 1078 |
| 495a | Seq. ID No. 1079 | 247355 | 247226 | 245949 | Seq. ID No. 1080 |
| 495b | Seq. ID No. 1081 | 247355 | 247235 | 245949 | Seq. ID No. 1082 |
| 495c | Seq. ID No. 1083 | 247355 | 247331 | 245949 | Seq. ID No. 1084 |
| 498a | Seq. ID No. 1085 | 247969 | 247912 | 247466 | Seq. ID No. 1086 |
| 498b | Seq. ID No. 1087 | 247969 | 247939 | 247466 | Seq. ID No. 1088 |
| 499a | Seq. ID No. 1089 | 249985 | 249943 | 247970 | Seq. ID No. 1090 |
| 499b | Seq. ID No. 1091 | 249985 | 249970 | 247970 | Seq. ID No. 1092 |
| 500 | Seq. ID No. 1093 | 250457 | 250439 | 250203 | Seq. ID No. 1094 |
| 502b | Seq. ID No. 1095 | 251041 | 250951 | 250475 | Seq. ID No. 1096 |
| 502c | Seq. ID No. 1097 | 251041 | 251026 | 250475 | Seq. ID No. 1098 |
| 504 | Seq. ID No. 1099 | 251402 | 251372 | 251070 | Seq. ID No. 1100 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 505a | Seq. ID No. 1101 | 254277 | 254214 | 251794 | Seq. ID No. 1102 |
| 505b | Seq. ID No. 1103 | 254277 | 254268 | 251794 | Seq. ID No. 1104 |
| 507a | Seq. ID No. 1105 | 252725 | 252782 | 253009 | Seq. ID No. 1106 |
| 507b | Seq. ID No. 1107 | 252725 | 252743 | 253009 | Seq. ID No. 1108 |
| 509 | Seq. ID No. 1109 | 256252 | 256246 | 254297 | Seq. ID No. 1110 |
| 510 | Seq. ID No. 1111 | 254739 | 254781 | 255125 | Seq. ID No. 1112 |
| 512a | Seq. ID No. 1113 | 257457 | 257433 | 256297 | Seq. ID No. 1114 |
| 512b | Seq. ID No. 1115 | 257457 | 257442 | 256297 | Seq. ID No. 1116 |
| 514 | Seq. ID No. 1117 | 257684 | 257681 | 257439 | Seq. ID No. 1118 |
| 515a | Seq. ID No. 1119 | 259131 | 258687 | 257914 | Seq. ID No. 1120 |
| 515b | Seq. ID No. 1121 | 259131 | 258987 | 257914 | Seq. ID No. 1122 |
| 515c | Seq. ID No. 1123 | 259131 | 259116 | 257914 | Seq. ID No. 1124 |
| 518a | Seq. ID No. 1125 | 260687 | 260399 | 259284 | Seq. ID No. 1126 |
| 518b | Seq. ID No. 1127 | 260687 | 260636 | 259284 | Seq. ID No. 1128 |
| 518c | Seq. ID No. 1129 | 260687 | 260663 | 259284 | Seq. ID No. 1130 |
| 521b | Seq. ID No. 1131 | 260218 | 260218 | 259886 | Seq. ID No. 1132 |
| 523 | Seq. ID No. 1133 | 261324 | 261393 | 261749 | Seq. ID No. 1134 |
| 524a | Seq. ID No. 1135 | 261758 | 262406 | 262645 | Seq. ID No. 1136 |
| 524b | Seq. ID No. 1137 | 261758 | 261779 | 262645 | Seq. ID No. 1138 |
| 525 | Seq. ID No. 1139 | 262929 | 262920 | 262696 | Seq. ID No. 1140 |
| 527a | Seq. ID No. 1141 | 262700 | 262727 | 263797 | Seq. ID No. 1142 |
| 527b | Seq. ID No. 1143 | 262700 | 262709 | 263797 | Seq. ID No. 1144 |
| 528a | Seq. ID No. 1145 | 263837 | 263867 | 265153 | Seq. ID No. 1146 |
| 528b | Seq. ID No. 1147 | 263837 | 263861 | 265153 | Seq. ID No. 1148 |
| 529 | Seq. ID No. 1149 | 266200 | 266170 | 265265 | Seq. ID No. 1150 |
| 530a | Seq. ID No. 1151 | 265689 | 265725 | 266060 | Seq. ID No. 1152 |
| 530b | Seq. ID No. 1153 | 265689 | 265701 | 266060 | Seq. ID No. 1154 |
| 533 | Seq. ID No. 1155 | 266675 | 266675 | 268132 | Seq. ID No. 1156 |
| 535 | Seq. ID No. 1157 | 268203 | 268266 | 269903 | Seq. ID No. 1158 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 536 | Seq. ID No. 1159 | 269936 | 269951 | 270898 | Seq. ID No. 1160 |
| 539b | Seq. ID No. 1161 | 271377 | 271527 | 272060 | Seq. ID No. 1162 |
| 539c | Seq. ID No. 1163 | 271377 | 271392 | 272060 | Seq. ID No. 1164 |
| 541a | Seq. ID No. 1165 | 272061 | 272481 | 272726 | Seq. ID No. 1166 |
| 541b | Seq. ID No. 1167 | 272061 | 272301 | 272726 | Seq. ID No. 1168 |
| 541c | Seq. ID No. 1169 | 272061 | 272100 | 272726 | Seq. ID No. 1170 |
| 541d | Seq. ID No. 1171 | 272061 | 272073 | 272726 | Seq. ID No. 1172 |
| 542 | Seq. ID No. 1173 | 273208 | 273208 | 273047 | Seq. ID No. 1174 |
| 543a | Seq. ID No. 1175 | 273962 | 273872 | 273201 | Seq. ID No. 1176 |
| 543b | Seq. ID No. 1177 | 273962 | 273914 | 273201 | Seq. ID No. 1178 |
| 543c | Seq. ID No. 1179 | 273962 | 273923 | 273201 | Seq. ID No. 1180 |
| 544 | Seq. ID No. 1181 | 275016 | 275004 | 273883 | Seq. ID No. 1182 |
| 545a | Seq. ID No. 1183 | 276076 | 275425 | 275009 | Seq. ID No. 1184 |
| 545b | Seq. ID No. 1185 | 276076 | 275956 | 275009 | Seq. ID No. 1186 |
| 545c | Seq. ID No. 1187 | 276076 | 276064 | 275009 | Seq. ID No. 1188 |
| 546a | Seq. ID No. 1189 | 277005 | 276924 | 276061 | Seq. ID No. 1190 |
| 546b | Seq. ID No. 1191 | 277005 | 276996 | 276061 | Seq. ID No. 1192 |
| 546c | Seq. ID No. 1193 | 277005 | 277005 | 276061 | Seq. ID No. 1194 |
| 547a | Seq. ID No. 1195 | 277408 | 277321 | 277067 | Seq. ID No. 1196 |
| 547b | Seq. ID No. 1197 | 277408 | 277348 | 277067 | Seq. ID No. 1198 |
| 548 | Seq. ID No. 1199 | 277734 | 277737 | 278195 | Seq. ID No. 1200 |
| 549b | Seq. ID No. 1201 | 280434 | 280410 | 279952 | Seq. ID No. 1202 |
| 550a | Seq. ID No. 1203 | 280361 | 280289 | 280002 | Seq. ID No. 1204 |
| 551 | Seq. ID No. 1205 | 278647 | 278659 | 280005 | Seq. ID No. 1206 |
| 553c | Seq. ID No. 1207 | 280944 | 280935 | 280549 | Seq. ID No. 1208 |
| 554a | Seq. ID No. 1209 | 280006 | 280024 | 281070 | Seq. ID No. 1210 |
| 554b | Seq. ID No. 1211 | 280006 | 280018 | 281070 | Seq. ID No. 1212 |
| 556 | Seq. ID No. 1213 | 282361 | 282358 | 282101 | Seq. ID No. 1214 |
| 557a | Seq. ID No. 1215 | 281066 | 281096 | 282127 | Seq. ID No. 1216 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 557b | Seq. ID No. 1217 | 281066 | 281078 | 282127 | Seq. ID No. 1218 |
| 560a | Seq. ID No. 1219 | 282117 | 282180 | 283415 | Seq. ID No. 1220 |
| 560b | Seq. ID No. 1221 | 282117 | 282141 | 283415 | Seq. ID No. 1222 |
| 561 | Seq. ID No. 1223 | 285333 | 285315 | 283717 | Seq. ID No. 1224 |
| 563 | Seq. ID No. 1225 | 285391 | 285409 | 286263 | Seq. ID No. 1226 |
| 564a | Seq. ID No. 1227 | 287308 | 287116 | 286733 | Seq. ID No. 1228 |
| 564b | Seq. ID No. 1229 | 287308 | 287149 | 286733 | Seq. ID No. 1230 |
| 564c | Seq. ID No. 1231 | 287308 | 287305 | 286733 | Seq. ID No. 1232 |
| 569 | Seq. ID No. 1233 | 287443 | 287461 | 288639 | Seq. ID No. 1234 |
| 570a | Seq. ID No. 1235 | 290452 | 289936 | 288827 | Seq. ID No. 1236 |
| 570b | Seq. ID No. 1237 | 290452 | 290434 | 288827 | Seq. ID No. 1238 |
| 571 | Seq. ID No. 1239 | 288840 | 288888 | 289115 | Seq. ID No. 1240 |
| 573 | Seq. ID No. 1241 | 292365 | 292332 | 290620 | Seq. ID No. 1242 |
| 576a | Seq. ID No. 1243 | 293274 | 293223 | 292969 | Seq. ID No. 1244 |
| 576b | Seq. ID No. 1245 | 293274 | 293271 | 292969 | Seq. ID No. 1246 |
| 578a | Seq. ID No. 1247 | 293907 | 293826 | 293311 | Seq. ID No. 1248 |
| 578b | Seq. ID No. 1249 | 293907 | 293859 | 293311 | Seq. ID No. 1250 |
| 580a | Seq. ID No. 1251 | 292718 | 292730 | 294118 | Seq. ID No. 1252 |
| 580b | Seq. ID No. 1253 | 292718 | 292727 | 294118 | Seq. ID No. 1254 |
| 583a | Seq. ID No. 1255 | 294365 | 294470 | 296365 | Seq. ID No. 1256 |
| 583b | Seq. ID No. 1257 | 294365 | 294467 | 296365 | Seq. ID No. 1258 |
| 585b | Seq. ID No. 1259 | 297067 | 297028 | 296621 | Seq. ID No. 1260 |
| 586a | Seq. ID No. 1261 | 296610 | 296637 | 297083 | Seq. ID No. 1262 |
| 586b | Seq. ID No. 1263 | 296610 | 296613 | 297083 | Seq. ID No. 1264 |
| 587a | Seq. ID No. 1265 | 298917 | 298014 | 297532 | Seq. ID No. 1266 |
| 587b | Seq. ID No. 1267 | 298917 | 298155 | 297532 | Seq. ID No. 1268 |
| 587c | Seq. ID No. 1269 | 298917 | 298611 | 297532 | Seq. ID No. 1270 |
| 587d | Seq. ID No. 1271 | 298917 | 298884 | 297532 | Seq. ID No. 1272 |
| 588a | Seq. ID No. 1273 | 299041 | 298978 | 298235 | Seq. ID No. 1274 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 588b | Seq. ID No. 1275 | 299041 | 299008 | 298235 | Seq. ID No. 1276 |
| 589a | Seq. ID No. 1277 | 298358 | 298382 | 298864 | Seq. ID No. 1278 |
| 589b | Seq. ID No. 1279 | 298358 | 298364 | 298864 | Seq. ID No. 1280 |
| 590 | Seq. ID No. 1281 | 299156 | 299141 | 298887 | Seq. ID No. 1282 |
| 595a | Seq. ID No. 1283 | 304140 | 303912 | 303337 | Seq. ID No. 1284 |
| 595b | Seq. ID No. 1285 | 304140 | 304134 | 303337 | Seq. ID No. 1286 |
| 596a | Seq. ID No. 1287 | 303419 | 303536 | 303781 | Seq. ID No. 1288 |
| 596b | Seq. ID No. 1289 | 303419 | 303440 | 303781 | Seq. ID No. 1290 |
| 596c | Seq. ID No. 1291 | 303419 | 303434 | 303781 | Seq. ID No. 1292 |
| 597 | Seq. ID No. 1293 | 304680 | 304674 | 304141 | Seq. ID No. 1294 |
| 598a | Seq. ID No. 1295 | 303848 | 303869 | 304144 | Seq. ID No. 1296 |
| 598b | Seq. ID No. 1297 | 303848 | 303863 | 304144 | Seq. ID No. 1298 |
| 599a | Seq. ID No. 1299 | 305589 | 305412 | 304867 | Seq. ID No. 1300 |
| 599b | Seq. ID No. 1301 | 305589 | 305589 | 304867 | Seq. ID No. 1302 |
| 600a | Seq. ID No. 1303 | 304997 | 305018 | 305251 | Seq. ID No. 1304 |
| 600b | Seq. ID No. 1305 | 304997 | 305012 | 305251 | Seq. ID No. 1306 |
| 603a | Seq. ID No. 1307 | 306557 | 306572 | 306961 | Seq. ID No. 1308 |
| 606 | Seq. ID No. 1309 | 309046 | 309028 | 308543 | Seq. ID No. 1310 |
| 607a | Seq. ID No. 1311 | 307964 | 308051 | 308665 | Seq. ID No. 1312 |
| 607b | Seq. ID No. 1313 | 307964 | 307979 | 308665 | Seq. ID No. 1314 |
| 609a | Seq. ID No. 1315 | 299740 | 299791 | 309309 | Seq. ID No. 1316 |
| 609b | Seq. ID No. 1317 | 299740 | 299752 | 309309 | Seq. ID No. 1318 |
| 610a | Seq. ID No. 1319 | 310481 | 310454 | 310221 | Seq. ID No. 1320 |
| 610b | Seq. ID No. 1321 | 310481 | 310472 | 310221 | Seq. ID No. 1322 |
| 611 | Seq. ID No. 1323 | 310255 | 310258 | 310515 | Seq. ID No. 1324 |
| 613a | Seq. ID No. 1325 | 310512 | 310941 | 311675 | Seq. ID No. 1326 |
| 613b | Seq. ID No. 1327 | 310512 | 310749 | 311675 | Seq. ID No. 1328 |
| 613c | Seq. ID No. 1329 | 310512 | 310584 | 311675 | Seq. ID No. 1330 |
| 613d | Seq. ID No. 1331 | 310512 | 310512 | 311675 | Seq. ID No. 1332 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 614a | Seq. ID No. 1333 | 311715 | 311754 | 312194 | Seq. ID No. 1334 |
| 614b | Seq. ID No. 1335 | 311715 | 311736 | 312194 | Seq. ID No. 1336 |
| 615b | Seq. ID No. 1337 | 312828 | 312807 | 312418 | Seq. ID No. 1338 |
| 618 | Seq. ID No. 1339 | 312443 | 312443 | 313573 | Seq. ID No. 1340 |
| 619a | Seq. ID No. 1341 | 314156 | 314096 | 313866 | Seq. ID No. 1342 |
| 619b | Seq. ID No. 1343 | 314156 | 314123 | 313866 | Seq. ID No. 1344 |
| 620 | Seq. ID No. 1345 | 314583 | 314571 | 313969 | Seq. ID No. 1346 |
| 623 | Seq. ID No. 1347 | 315369 | 315318 | 314881 | Seq. ID No. 1348 |
| 624a | Seq. ID No. 1349 | 315050 | 315110 | 315355 | Seq. ID No. 1350 |
| 624b | Seq. ID No. 1351 | 315050 | 315107 | 315355 | Seq. ID No. 1352 |
| 624c | Seq. ID No. 1353 | 315050 | 315098 | 315355 | Seq. ID No. 1354 |
| 625 | Seq. ID No. 1355 | 315811 | 315811 | 315677 | Seq. ID No. 1356 |
| 626a | Seq. ID No. 1357 | 315560 | 315863 | 316420 | Seq. ID No. 1358 |
| 626b | Seq. ID No. 1359 | 315560 | 315638 | 316420 | Seq. ID No. 1360 |
| 626c | Seq. ID No. 1361 | 315560 | 315626 | 316420 | Seq. ID No. 1362 |
| 631a | Seq. ID No. 1363 | 316535 | 317297 | 319288 | Seq. ID No. 1364 |
| 631b | Seq. ID No. 1365 | 316535 | 316610 | 319288 | Seq. ID No. 1366 |
| 631c | Seq. ID No. 1367 | 316535 | 316574 | 319288 | Seq. ID No. 1368 |
| 631d | Seq. ID No. 1369 | 316535 | 316562 | 319288 | Seq. ID No. 1370 |
| 632b | Seq. ID No. 1371 | 319900 | 319867 | 319622 | Seq. ID No. 1372 |
| 633a | Seq. ID No. 1373 | 319626 | 319701 | 320822 | Seq. ID No. 1374 |
| 633b | Seq. ID No. 1375 | 319626 | 319680 | 320822 | Seq. ID No. 1376 |
| 633c | Seq. ID No. 1377 | 319626 | 319656 | 320822 | Seq. ID No. 1378 |
| 634b | Seq. ID No. 1379 | 320918 | 320921 | 321223 | Seq. ID No. 1380 |
| 636 | Seq. ID No. 1381 | 323400 | 323388 | 323161 | Seq. ID No. 1382 |
| 637a | Seq. ID No. 1383 | 321686 | 321737 | 323404 | Seq. ID No. 1384 |
| 637b | Seq. ID No. 1385 | 321686 | 321731 | 323404 | Seq. ID No. 1386 |
| 637c | Seq. ID No. 1387 | 321686 | 321695 | 323404 | Seq. ID No. 1388 |
| 640 | Seq. ID No. 1389 | 324722 | 324674 | 324414 | Seq. ID No. 1390 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 641a | Seq. ID No. 1391 | 323549 | 323594 | 324448 | Seq. ID No. 1392 |
| 641b | Seq. ID No. 1393 | 323549 | 323549 | 324448 | Seq. ID No. 1394 |
| 643 | Seq. ID No. 1395 | 324439 | 324460 | 324894 | Seq. ID No. 1396 |
| 644a | Seq. ID No. 1397 | 324791 | 324902 | 325087 | Seq. ID No. 1398 |
| 644b | Seq. ID No. 1399 | 324791 | 324830 | 325087 | Seq. ID No. 1400 |
| 645 | Seq. ID No. 1401 | 325456 | 325453 | 325181 | Seq. ID No. 1402 |
| 650 | Seq. ID No. 1403 | 325080 | 325125 | 326261 | Seq. ID No. 1404 |
| 652 | Seq. ID No. 1405 | 326348 | 326354 | 326716 | Seq. ID No. 1406 |
| 653a | Seq. ID No. 1407 | 326913 | 327024 | 328373 | Seq. ID No. 1408 |
| 653b | Seq. ID No. 1409 | 326913 | 326943 | 328373 | Seq. ID No. 1410 |
| 653c | Seq. ID No. 1411 | 326913 | 326925 | 328373 | Seq. ID No. 1412 |
| 656 | Seq. ID No. 1413 | 328370 | 328373 | 329863 | Seq. ID No. 1414 |
| 657c | Seq. ID No. 1415 | 330464 | 330530 | 330994 | Seq. ID No. 1416 |
| 658a | Seq. ID No. 1417 | 331110 | 331140 | 331565 | Seq. ID No. 1418 |
| 658b | Seq. ID No. 1419 | 331110 | 331110 | 331565 | Seq. ID No. 1420 |
| 659a | Seq. ID No. 1421 | 332594 | 332510 | 332055 | Seq. ID No. 1422 |
| 659b | Seq. ID No. 1423 | 332594 | 332582 | 332055 | Seq. ID No. 1424 |
| 661 | Seq. ID No. 1425 | 331974 | 332040 | 332771 | Seq. ID No. 1426 |
| 663 | Seq. ID No. 1427 | 333202 | 333205 | 333858 | Seq. ID No. 1428 |
| 665 | Seq. ID No. 1429 | 334188 | 334203 | 334598 | Seq. ID No. 1430 |
| 666 | Seq. ID No. 1431 | 334592 | 334598 | 334942 | Seq. ID No. 1432 |
| 670 | Seq. ID No. 1433 | 334988 | 335009 | 336517 | Seq. ID No. 1434 |
| 674a | Seq. ID No. 1435 | 336652 | 336691 | 338523 | Seq. ID No. 1436 |
| 674b | Seq. ID No. 1437 | 336652 | 336652 | 338523 | Seq. ID No. 1438 |
| 676 | Seq. ID No. 1439 | 340581 | 340611 | 340835 | Seq. ID No. 1440 |
| 677a | Seq. ID No. 1441 | 342484 | 342442 | 340949 | Seq. ID No. 1442 |
| 677b | Seq. ID No. 1443 | 342484 | 342469 | 340949 | Seq. ID No. 1444 |
| 679a | Seq. ID No. 1445 | 343500 | 343410 | 343186 | Seq. ID No. 1446 |
| 679b | Seq. ID No. 1447 | 343500 | 343461 | 343186 | Seq. ID No. 1448 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 680 | Seq. ID No. 1449 | 342758 | 342758 | 343474 | Seq. ID No. 1450 |
| 681 | Seq. ID No. 1451 | 343432 | 343540 | 344313 | Seq. ID No. 1452 |
| 683a | Seq. ID No. 1453 | 344288 | 344393 | 345187 | Seq. ID No. 1454 |
| 683b | Seq. ID No. 1455 | 344288 | 344294 | 345187 | Seq. ID No. 1456 |
| 684 | Seq. ID No. 1457 | 345386 | 345395 | 345622 | Seq. ID No. 1458 |
| 687 | Seq. ID No. 1459 | 345974 | 345974 | 347074 | Seq. ID No. 1460 |
| 688a | Seq. ID No. 1461 | 347062 | 347122 | 347847 | Seq. ID No. 1462 |
| 688b | Seq. ID No. 1463 | 347062 | 347116 | 347847 | Seq. ID No. 1464 |
| 690 | Seq. ID No. 1465 | 348033 | 348051 | 349016 | Seq. ID No. 1466 |
| 691a | Seq. ID No. 1467 | 349813 | 349777 | 349262 | Seq. ID No. 1468 |
| 691b | Seq. ID No. 1469 | 349813 | 349807 | 349262 | Seq. ID No. 1470 |
| 692 | Seq. ID No. 1471 | 350818 | 350797 | 350156 | Seq. ID No. 1472 |
| 694 | Seq. ID No. 1473 | 351167 | 351206 | 351940 | Seq. ID No. 1474 |
| 696 | Seq. ID No. 1475 | 351998 | 352013 | 352717 | Seq. ID No. 1476 |
| 698 | Seq. ID No. 1477 | 352953 | 352974 | 353339 | Seq. ID No. 1478 |
| 699b | Seq. ID No. 1479 | 354064 | 354055 | 353720 | Seq. ID No. 1480 |
| 700a | Seq. ID No. 1481 | 353340 | 353775 | 354068 | Seq. ID No. 1482 |
| 700b | Seq. ID No. 1483 | 353340 | 353364 | 354068 | Seq. ID No. 1484 |
| 700c | Seq. ID No. 1485 | 353340 | 353358 | 354068 | Seq. ID No. 1486 |
| 703 | Seq. ID No. 1487 | 354843 | 354864 | 356138 | Seq. ID No. 1488 |
| 705a | Seq. ID No. 1489 | 356139 | 356178 | 357137 | Seq. ID No. 1490 |
| 705b | Seq. ID No. 1491 | 356139 | 356151 | 357137 | Seq. ID No. 1492 |
| 707 | Seq. ID No. 1493 | 358618 | 358600 | 357662 | Seq. ID No. 1494 |
| 709 | Seq. ID No. 1495 | 359170 | 359134 | 358619 | Seq. ID No. 1496 |
| 710 | Seq. ID No. 1497 | 359781 | 359781 | 359350 | Seq. ID No. 1498 |
| 712a | Seq. ID No. 1499 | 360586 | 360520 | 359801 | Seq. ID No. 1500 |
| 712b | Seq. ID No. 1501 | 360586 | 360550 | 359801 | Seq. ID No. 1502 |
| 715a | Seq. ID No. 1503 | 360752 | 360839 | 361831 | Seq. ID No. 1504 |
| 715b | Seq. ID No. 1505 | 360752 | 360818 | 361831 | Seq. ID No. 1506 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 717 | Seq. ID No. 1507 | 361785 | 361833 | 362309 | Seq. ID No. 1508 |
| 718a | Seq. ID No. 1509 | 362257 | 362323 | 362622 | Seq. ID No. 1510 |
| 721 | Seq. ID No. 1511 | 363839 | 363815 | 363351 | Seq. ID No. 1512 |
| 722a | Seq. ID No. 1513 | 362629 | 363682 | 364056 | Seq. ID No. 1514 |
| 722b | Seq. ID No. 1515 | 362629 | 363304 | 364056 | Seq. ID No. 1516 |
| 722c | Seq. ID No. 1517 | 362629 | 362653 | 364056 | Seq. ID No. 1518 |
| 724a | Seq. ID No. 1519 | 364323 | 364773 | 366119 | Seq. ID No. 1520 |
| 724b | Seq. ID No. 1521 | 364323 | 364470 | 366119 | Seq. ID No. 1522 |
| 724c | Seq. ID No. 1523 | 364323 | 364455 | 366119 | Seq. ID No. 1524 |
| 724d | Seq. ID No. 1525 | 364323 | 364326 | 366119 | Seq. ID No. 1526 |
| 726 | Seq. ID No. 1527 | 366101 | 366155 | 366637 | Seq. ID No. 1528 |
| 728a | Seq. ID No. 1529 | 366642 | 366774 | 367577 | Seq. ID No. 1530 |
| 728b | Seq. ID No. 1531 | 366642 | 366654 | 367577 | Seq. ID No. 1532 |
| 730a | Seq. ID No. 1533 | 367564 | 368092 | 368385 | Seq. ID No. 1534 |
| 730b | Seq. ID No. 1535 | 367564 | 367888 | 368385 | Seq. ID No. 1536 |
| 730c | Seq. ID No. 1537 | 367564 | 367723 | 368385 | Seq. ID No. 1538 |
| 730d | Seq. ID No. 1539 | 367564 | 367564 | 368385 | Seq. ID No. 1540 |
| 731b | Seq. ID No. 1541 | 368400 | 368415 | 368798 | Seq. ID No. 1542 |
| 732 | Seq. ID No. 1543 | 368838 | 368880 | 370058 | Seq. ID No. 1544 |
| 738a | Seq. ID No. 1545 | 371023 | 372094 | 372465 | Seq. ID No. 1546 |
| 738b | Seq. ID No. 1547 | 371023 | 371140 | 372465 | Seq. ID No. 1548 |
| 738c | Seq. ID No. 1549 | 371023 | 371050 | 372465 | Seq. ID No. 1550 |
| 739 | Seq. ID No. 1551 | 373440 | 373434 | 373159 | Seq. ID No. 1552 |
| 740 | Seq. ID No. 1553 | 374954 | 374927 | 374634 | Seq. ID No. 1554 |
| 741a | Seq. ID No. 1555 | 378064 | 378016 | 377489 | Seq. ID No. 1556 |
| 741b | Seq. ID No. 1557 | 378064 | 378058 | 377489 | Seq. ID No. 1558 |
| 743a | Seq. ID No. 1559 | 372934 | 373003 | 378591 | Seq. ID No. 1560 |
| 743b | Seq. ID No. 1561 | 372934 | 372937 | 378591 | Seq. ID No. 1562 |
| 744 | Seq. ID No. 1563 | 379071 | 379080 | 380426 | Seq. ID No. 1564 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 745a | Seq. ID No. 1565 | 380454 | 380478 | 381371 | Seq. ID No. 1566 |
| 745b | Seq. ID No. 1567 | 380454 | 380463 | 381371 | Seq. ID No. 1568 |
| 746a | Seq. ID No. 1569 | 381346 | 381391 | 382191 | Seq. ID No. 1570 |
| 746b | Seq. ID No. 1571 | 381346 | 381364 | 382191 | Seq. ID No. 1572 |
| 747 | Seq. ID No. 1573 | 382184 | 382196 | 383323 | Seq. ID No. 1574 |
| 748a | Seq. ID No. 1575 | 383287 | 383437 | 384072 | Seq. ID No. 1576 |
| 748b | Seq. ID No. 1577 | 383287 | 383326 | 384072 | Seq. ID No. 1578 |
| 749 | Seq. ID No. 1579 | 386651 | 386615 | 386352 | Seq. ID No. 1580 |
| 751 | Seq. ID No. 1581 | 384408 | 384465 | 390965 | Seq. ID No. 1582 |
| 754a | Seq. ID No. 1583 | 391275 | 392166 | 392996 | Seq. ID No. 1584 |
| 754b | Seq. ID No. 1585 | 391275 | 391416 | 392996 | Seq. ID No. 1586 |
| 754c | Seq. ID No. 1587 | 391275 | 391335 | 392996 | Seq. ID No. 1588 |
| 754d | Seq. ID No. 1589 | 391275 | 391317 | 392996 | Seq. ID No. 1590 |
| 756a | Seq. ID No. 1591 | 393013 | 393040 | 394449 | Seq. ID No. 1592 |
| 756b | Seq. ID No. 1593 | 393013 | 393025 | 394449 | Seq. ID No. 1594 |
| 758 | Seq. ID No. 1595 | 394517 | 394532 | 394849 | Seq. ID No. 1596 |
| 760 | Seq. ID No. 1597 | 395517 | 395529 | 396824 | Seq. ID No. 1598 |
| 762a | Seq. ID No. 1599 | 396888 | 396909 | 397820 | Seq. ID No. 1600 |
| 762b | Seq. ID No. 1601 | 396888 | 396906 | 397820 | Seq. ID No. 1602 |
| 762c | Seq. ID No. 1603 | 396888 | 396903 | 397820 | Seq. ID No. 1604 |
| 763a | Seq. ID No. 1605 | 397821 | 397887 | 398228 | Seq. ID No. 1606 |
| 763b | Seq. ID No. 1607 | 397821 | 397824 | 398228 | Seq. ID No. 1608 |
| 764 | Seq. ID No. 1609 | 398537 | 398537 | 398635 | Seq. ID No. 1610 |
| 766 | Seq. ID No. 1611 | 399089 | 399101 | 399967 | Seq. ID No. 1612 |
| 767 | Seq. ID No. 1613 | 399968 | 400034 | 400435 | Seq. ID No. 1614 |
| 770a | Seq. ID No. 1615 | 400630 | 400984 | 401823 | Seq. ID No. 1616 |
| 770b | Seq. ID No. 1617 | 400630 | 400894 | 401823 | Seq. ID No. 1618 |
| 770c | Seq. ID No. 1619 | 400630 | 400693 | 401823 | Seq. ID No. 1620 |
| 772a | Seq. ID No. 1621 | 401846 | 401996 | 402577 | Seq. ID No. 1622 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 772b | Seq. ID No. 1623 | 401846 | 401849 | 402577 | Seq. ID No. 1624 |
| 774 | Seq. ID No. 1625 | 402606 | 402699 | 402929 | Seq. ID No. 1626 |
| 775 | Seq. ID No. 1627 | 402562 | 402595 | 403254 | Seq. ID No. 1628 |
| 777a | Seq. ID No. 1629 | 404283 | 404343 | 404675 | Seq. ID No. 1630 |
| 777c | Seq. ID No. 1631 | 404283 | 404298 | 404675 | Seq. ID No. 1632 |
| 779 | Seq. ID No. 1633 | 404803 | 404809 | 405120 | Seq. ID No. 1634 |
| 780a | Seq. ID No. 1635 | 404676 | 404748 | 405221 | Seq. ID No. 1636 |
| 780b | Seq. ID No. 1637 | 404676 | 404721 | 405221 | Seq. ID No. 1638 |
| 782b | Seq. ID No. 1639 | 406015 | 405988 | 405311 | Seq. ID No. 1640 |
| 785 | Seq. ID No. 1641 | 407774 | 407762 | 406443 | Seq. ID No. 1642 |
| 786b | Seq. ID No. 1643 | 407221 | 407152 | 406865 | Seq. ID No. 1644 |
| 788a | Seq. ID No. 1645 | 408557 | 408227 | 407775 | Seq. ID No. 1646 |
| 788b | Seq. ID No. 1647 | 408557 | 408557 | 407775 | Seq. ID No. 1648 |
| 789a | Seq. ID No. 1649 | 409361 | 409145 | 408558 | Seq. ID No. 1650 |
| 789b | Seq. ID No. 1651 | 409361 | 409259 | 408558 | Seq. ID No. 1652 |
| 789c | Seq. ID No. 1653 | 409361 | 409337 | 408558 | Seq. ID No. 1654 |
| 791 | Seq. ID No. 1655 | 408880 | 408910 | 409161 | Seq. ID No. 1656 |
| 792 | Seq. ID No. 1657 | 410107 | 410107 | 409340 | Seq. ID No. 1658 |
| 794a | Seq. ID No. 1659 | 411108 | 411066 | 410167 | Seq. ID No. 1660 |
| 794b | Seq. ID No. 1661 | 411108 | 411087 | 410167 | Seq. ID No. 1662 |
| 794c | Seq. ID No. 1663 | 411108 | 411096 | 410167 | Seq. ID No. 1664 |
| 794d | Seq. ID No. 1665 | 411108 | 411105 | 410167 | Seq. ID No. 1666 |
| 795 | Seq. ID No. 1667 | 411252 | 411252 | 411422 | Seq. ID No. 1668 |
| 797 | Seq. ID No. 1669 | 411604 | 411610 | 412293 | Seq. ID No. 1670 |
| 799a | Seq. ID No. 1671 | 412586 | 413474 | 413698 | Seq. ID No. 1672 |
| 799b | Seq. ID No. 1673 | 412586 | 413210 | 413698 | Seq. ID No. 1674 |
| 799c | Seq. ID No. 1675 | 412586 | 412757 | 413698 | Seq. ID No. 1676 |
| 799d | Seq. ID No. 1677 | 412586 | 412721 | 413698 | Seq. ID No. 1678 |
| 799e | Seq. ID No. 1679 | 412586 | 412667 | 413698 | Seq. ID No. 1680 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 799f | Seq. ID No. 1681 | 412586 | 412664 | 413698 | Seq. ID No. 1682 |
| 803a | Seq. ID No. 1683 | 413755 | 413779 | 415128 | Seq. ID No. 1684 |
| 803b | Seq. ID No. 1685 | 413755 | 413758 | 415128 | Seq. ID No. 1686 |
| 804a | Seq. ID No. 1687 | 415466 | 415487 | 416794 | Seq. ID No. 1688 |
| 804b | Seq. ID No. 1689 | 415466 | 415478 | 416794 | Seq. ID No. 1690 |
| 807 | Seq. ID No. 1691 | 416862 | 417024 | 418199 | Seq. ID No. 1692 |
| 808 | Seq. ID No. 1693 | 418549 | 418555 | 418794 | Seq. ID No. 1694 |
| 809b | Seq. ID No. 1695 | 419662 | 419632 | 419243 | Seq. ID No. 1696 |
| 812 | Seq. ID No. 1697 | 418200 | 418200 | 421274 | Seq. ID No. 1698 |
| 813 | Seq. ID No. 1699 | 421399 | 421414 | 422034 | Seq. ID No. 1700 |
| 816 | Seq. ID No. 1701 | 422122 | 422122 | 422283 | Seq. ID No. 1702 |
| 820a | Seq. ID No. 1703 | 424733 | 424739 | 424969 | Seq. ID No. 1704 |
| 820b | Seq. ID No. 1705 | 424733 | 424733 | 424969 | Seq. ID No. 1706 |
| 826 | Seq. ID No. 1707 | 422827 | 422842 | 428625 | Seq. ID No. 1708 |
| 829a | Seq. ID No. 1709 | 429410 | 429518 | 430123 | Seq. ID No. 1710 |
| 829b | Seq. ID No. 1711 | 429410 | 429416 | 430123 | Seq. ID No. 1712 |
| 830 | Seq. ID No. 1713 | 431650 | 431614 | 430421 | Seq. ID No. 1714 |
| 834a | Seq. ID No. 1715 | 431939 | 432029 | 432535 | Seq. ID No. 1716 |
| 834b | Seq. ID No. 1717 | 431939 | 431993 | 432535 | Seq. ID No. 1718 |
| 834c | Seq. ID No. 1719 | 431939 | 431972 | 432535 | Seq. ID No. 1720 |
| 835a | Seq. ID No. 1721 | 432638 | 432680 | 433231 | Seq. ID No. 1722 |
| 835b | Seq. ID No. 1723 | 432638 | 432644 | 433231 | Seq. ID No. 1724 |
| 836a | Seq. ID No. 1725 | 434079 | 434013 | 433579 | Seq. ID No. 1726 |
| 836b | Seq. ID No. 1727 | 434079 | 434034 | 433579 | Seq. ID No. 1728 |
| 836c | Seq. ID No. 1729 | 434079 | 434070 | 433579 | Seq. ID No. 1730 |
| 837a | Seq. ID No. 1731 | 434505 | 435360 | 435590 | Seq. ID No. 1732 |
| 837b | Seq. ID No. 1733 | 434505 | 434817 | 435590 | Seq. ID No. 1734 |
| 837c | Seq. ID No. 1735 | 434505 | 434505 | 435590 | Seq. ID No. 1736 |
| 843 | Seq. ID No. 1737 | 435813 | 435840 | 436859 | Seq. ID No. 1738 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 847a | Seq. ID No. 1739 | 436831 | 437089 | 439215 | Seq. ID No. 1740 |
| 847b | Seq. ID No. 1741 | 436831 | 437068 | 439215 | Seq. ID No. 1742 |
| 848 | Seq. ID No. 1743 | 439411 | 439411 | 439268 | Seq. ID No. 1744 |
| 849a | Seq. ID No. 1745 | 440732 | 440618 | 439470 | Seq. ID No. 1746 |
| 849b | Seq. ID No. 1747 | 440732 | 440684 | 439470 | Seq. ID No. 1748 |
| 851a | Seq. ID No. 1749 | 440982 | 441087 | 442634 | Seq. ID No. 1750 |
| 851b | Seq. ID No. 1751 | 440982 | 441072 | 442634 | Seq. ID No. 1752 |
| 853a | Seq. ID No. 1753 | 442726 | 442870 | 443319 | Seq. ID No. 1754 |
| 853b | Seq. ID No. 1755 | 442726 | 442753 | 443319 | Seq. ID No. 1756 |
| 853c | Seq. ID No. 1757 | 442726 | 442741 | 443319 | Seq. ID No. 1758 |
| 854 | Seq. ID No. 1759 | 444233 | 444233 | 444006 | Seq. ID No. 1760 |
| 855 | Seq. ID No. 1761 | 443652 | 443679 | 444119 | Seq. ID No. 1762 |
| 857 | Seq. ID No. 1763 | 446274 | 446247 | 445903 | Seq. ID No. 1764 |
| 859a | Seq. ID No. 1765 | 444185 | 445520 | 446704 | Seq. ID No. 1766 |
| 859b | Seq. ID No. 1767 | 444185 | 444869 | 446704 | Seq. ID No. 1768 |
| 859c | Seq. ID No. 1769 | 444185 | 444221 | 446704 | Seq. ID No. 1770 |
| 859d | Seq. ID No. 1771 | 444185 | 444212 | 446704 | Seq. ID No. 1772 |
| 860 | Seq. ID No. 1773 | 446857 | 446887 | 447093 | Seq. ID No. 1774 |
| 862 | Seq. ID No. 1775 | 447165 | 447171 | 447398 | Seq. ID No. 1776 |
| 863 | Seq. ID No. 1777 | 447152 | 447161 | 448180 | Seq. ID No. 1778 |
| 864a | Seq. ID No. 1779 | 449021 | 448991 | 448518 | Seq. ID No. 1780 |
| 864b | Seq. ID No. 1781 | 449021 | 449003 | 448518 | Seq. ID No. 1782 |
| 866a | Seq. ID No. 1783 | 448612 | 448801 | 449868 | Seq. ID No. 1784 |
| 866b | Seq. ID No. 1785 | 448612 | 448612 | 449868 | Seq. ID No. 1786 |
| 868a | Seq. ID No. 1787 | 449855 | 450269 | 450718 | Seq. ID No. 1788 |
| 868b | Seq. ID No. 1789 | 449855 | 449861 | 450718 | Seq. ID No. 1790 |
| 870 | Seq. ID No. 1791 | 450768 | 450792 | 451754 | Seq. ID No. 1792 |
| 873a | Seq. ID No. 1793 | 451842 | 452103 | 452924 | Seq. ID No. 1794 |
| 873b | Seq. ID No. 1795 | 451842 | 451920 | 452924 | Seq. ID No. 1796 |

TABLE 2: ALL CLAIMED ORFS

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 873c | Seq. ID No. 1797 | 451842 | 451866 | 452924 | Seq. ID No. 1798 |
| 874a | Seq. ID No. 1799 | 453019 | 453136 | 453336 | Seq. ID No. 1800 |
| 874b | Seq. ID No. 1801 | 453019 | 453043 | 453336 | Seq. ID No. 1802 |
| 875 | Seq. ID No. 1803 | 453388 | 453415 | 453651 | Seq. ID No. 1804 |
| 876 | Seq. ID No. 1805 | 453874 | 453898 | 454509 | Seq. ID No. 1806 |
| 878a | Seq. ID No. 1807 | 454510 | 454738 | 455313 | Seq. ID No. 1808 |
| 878b | Seq. ID No. 1809 | 454510 | 454588 | 455313 | Seq. ID No. 1810 |
| 878c | Seq. ID No. 1811 | 454510 | 454549 | 455313 | Seq. ID No. 1812 |
| 880a | Seq. ID No. 1813 | 455379 | 455454 | 456086 | Seq. ID No. 1814 |
| 880b | Seq. ID No. 1815 | 455379 | 455406 | 456086 | Seq. ID No. 1816 |
| 880c | Seq. ID No. 1817 | 455379 | 455397 | 456086 | Seq. ID No. 1818 |
| 885 | Seq. ID No. 1819 | 456297 | 456309 | 457472 | Seq. ID No. 1820 |
| 886 | Seq. ID No. 1821 | 457408 | 457453 | 458769 | Seq. ID No. 1822 |
| 887 | Seq. ID No. 1823 | 459402 | 459396 | 459118 | Seq. ID No. 1824 |
| 888 | Seq. ID No. 1825 | 459077 | 459080 | 460357 | Seq. ID No. 1826 |
| 890a | Seq. ID No. 1827 | 460448 | 460523 | 461002 | Seq. ID No. 1828 |
| 890b | Seq. ID No. 1829 | 460448 | 460475 | 461002 | Seq. ID No. 1830 |
| 894 | Seq. ID No. 1831 | 463346 | 463346 | 463140 | Seq. ID No. 1832 |
| 904 | Seq. ID No. 1833 | 468103 | 468097 | 467843 | Seq. ID No. 1834 |
| 907a | Seq. ID No. 1835 | 470121 | 470022 | 469240 | Seq. ID No. 1836 |
| 907b | Seq. ID No. 1837 | 470121 | 470103 | 469240 | Seq. ID No. 1838 |
| 908a | Seq. ID No. 1839 | 471898 | 471376 | 470636 | Seq. ID No. 1840 |
| 908b | Seq. ID No. 1841 | 471898 | 471886 | 470636 | Seq. ID No. 1842 |
| 908c | Seq. ID No. 1843 | 471898 | 471895 | 470636 | Seq. ID No. 1844 |
| 911 | Seq. ID No. 1845 | 472251 | 472314 | 472943 | Seq. ID No. 1846 |
| 912 | Seq. ID No. 1847 | 472944 | 472953 | 473780 | Seq. ID No. 1848 |
| 916 | Seq. ID No. 1849 | 473774 | 473798 | 476413 | Seq. ID No. 1850 |
| 917 | Seq. ID No. 1851 | 476720 | 476726 | 476983 | Seq. ID No. 1852 |
| 918b | Seq. ID No. 1853 | 476974 | 477043 | 477636 | Seq. ID No. 1854 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 918c | Seq. ID No. 1855 | 476974 | 476986 | 477636 | Seq. ID No. 1856 |
| 919 | Seq. ID No. 1857 | 477670 | 477709 | 478032 | Seq. ID No. 1858 |
| 923 | Seq. ID No. 1859 | 477585 | 477636 | 479852 | Seq. ID No. 1860 |
| 925a | Seq. ID No. 1861 | 479863 | 480316 | 481326 | Seq. ID No. 1862 |
| 925b | Seq. ID No. 1863 | 479863 | 479887 | 481326 | Seq. ID No. 1864 |
| 926 | Seq. ID No. 1865 | 481268 | 481319 | 482335 | Seq. ID No. 1866 |
| 927 | Seq. ID No. 1867 | 482317 | 482347 | 482928 | Seq. ID No. 1868 |
| 929a | Seq. ID No. 1869 | 482918 | 484175 | 484519 | Seq. ID No. 1870 |
| 929b | Seq. ID No. 1871 | 482918 | 482918 | 484519 | Seq. ID No. 1872 |
| 930 | Seq. ID No. 1873 | 484543 | 484543 | 485790 | Seq. ID No. 1874 |
| 931 | Seq. ID No. 1875 | 486281 | 486221 | 485898 | Seq. ID No. 1876 |
| 932 | Seq. ID No. 1877 | 485791 | 485809 | 486294 | Seq. ID No. 1878 |
| 934a | Seq. ID No. 1879 | 486257 | 486377 | 487435 | Seq. ID No. 1880 |
| 934b | Seq. ID No. 1881 | 486257 | 486353 | 487435 | Seq. ID No. 1882 |
| 934c | Seq. ID No. 1883 | 486257 | 486278 | 487435 | Seq. ID No. 1884 |
| 934d | Seq. ID No. 1885 | 486257 | 486269 | 487435 | Seq. ID No. 1886 |
| 935 | Seq. ID No. 1887 | 487436 | 487463 | 488152 | Seq. ID No. 1888 |
| 938 | Seq. ID No. 1889 | 488336 | 488399 | 489727 | Seq. ID No. 1890 |
| 939a | Seq. ID No. 1891 | 491177 | 490841 | 489834 | Seq. ID No. 1892 |
| 939b | Seq. ID No. 1893 | 491177 | 490982 | 489834 | Seq. ID No. 1894 |
| 939c | Seq. ID No. 1895 | 491177 | 491162 | 489834 | Seq. ID No. 1896 |
| 942 | Seq. ID No. 1897 | 492089 | 492065 | 491685 | Seq. ID No. 1898 |
| 943 | Seq. ID No. 1899 | 492484 | 492466 | 492164 | Seq. ID No. 1900 |
| 944a | Seq. ID No. 1901 | 493707 | 493518 | 492457 | Seq. ID No. 1902 |
| 944b | Seq. ID No. 1903 | 493707 | 493593 | 492457 | Seq. ID No. 1904 |
| 946 | Seq. ID No. 1905 | 493834 | 493834 | 494376 | Seq. ID No. 1906 |
| 949a | Seq. ID No. 1907 | 494411 | 494837 | 495802 | Seq. ID No. 1908 |
| 949b | Seq. ID No. 1909 | 494411 | 494537 | 495802 | Seq. ID No. 1910 |
| 949c | Seq. ID No. 1911 | 494411 | 494498 | 495802 | Seq. ID No. 1912 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 949d | Seq. ID No. 1913 | 494411 | 494435 | 495802 | Seq. ID No. 1914 |
| 950 | Seq. ID No. 1915 | 496174 | 496171 | 495929 | Seq. ID No. 1916 |
| 951a | Seq. ID No. 1917 | 495906 | 495984 | 496895 | Seq. ID No. 1918 |
| 951b | Seq. ID No. 1919 | 495906 | 495915 | 496895 | Seq. ID No. 1920 |
| 952a | Seq. ID No. 1921 | 497115 | 497547 | 498344 | Seq. ID No. 1922 |
| 952b | Seq. ID No. 1923 | 497115 | 497211 | 498344 | Seq. ID No. 1924 |
| 954 | Seq. ID No. 1925 | 498503 | 498518 | 499984 | Seq. ID No. 1926 |
| 955a | Seq. ID No. 1927 | 500596 | 500569 | 500297 | Seq. ID No. 1928 |
| 955b | Seq. ID No. 1929 | 500596 | 500575 | 500297 | Seq. ID No. 1930 |
| 956 | Seq. ID No. 1931 | 500019 | 500019 | 501308 | Seq. ID No. 1932 |
| 958a | Seq. ID No. 1933 | 501309 | 501417 | 501866 | Seq. ID No. 1934 |
| 958b | Seq. ID No. 1935 | 501309 | 501309 | 501866 | Seq. ID No. 1936 |
| 959 | Seq. ID No. 1937 | 501978 | 501993 | 502364 | Seq. ID No. 1938 |
| 961a | Seq. ID No. 1939 | 502392 | 502446 | 502943 | Seq. ID No. 1940 |
| 961b | Seq. ID No. 1941 | 502392 | 502425 | 502943 | Seq. ID No. 1942 |
| 961c | Seq. ID No. 1943 | 502392 | 502413 | 502943 | Seq. ID No. 1944 |
| 963 | Seq. ID No. 1945 | 502951 | 502978 | 503949 | Seq. ID No. 1946 |
| 965a | Seq. ID No. 1947 | 503950 | 503974 | 504930 | Seq. ID No. 1948 |
| 965b | Seq. ID No. 1949 | 503950 | 503965 | 504930 | Seq. ID No. 1950 |
| 966a | Seq. ID No. 1951 | 504879 | 504990 | 506417 | Seq. ID No. 1952 |
| 966b | Seq. ID No. 1953 | 504879 | 504975 | 506417 | Seq. ID No. 1954 |
| 967a | Seq. ID No. 1955 | 506365 | 506407 | 506805 | Seq. ID No. 1956 |
| 967b | Seq. ID No. 1957 | 506365 | 506377 | 506805 | Seq. ID No. 1958 |
| 968 | Seq. ID No. 1959 | 507166 | 507184 | 507951 | Seq. ID No. 1960 |
| 969 | Seq. ID No. 1961 | 510913 | 510913 | 508775 | Seq. ID No. 1962 |
| 972a | Seq. ID No. 1963 | 512618 | 512444 | 511044 | Seq. ID No. 1964 |
| 972b | Seq. ID No. 1965 | 512618 | 512603 | 511044 | Seq. ID No. 1966 |
| 976 | Seq. ID No. 1967 | 512815 | 512863 | 514659 | Seq. ID No. 1968 |
| 977a | Seq. ID No. 1969 | 515753 | 515654 | 514809 | Seq. ID No. 1970 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 977b | Seq. ID No. 1971 | 515753 | 515738 | 514809 | Seq. ID No. 1972 |
| 978a | Seq. ID No. 1973 | 516892 | 516718 | 516326 | Seq. ID No. 1974 |
| 978b | Seq. ID No. 1975 | 516892 | 516856 | 516326 | Seq. ID No. 1976 |
| 979 | Seq. ID No. 1977 | 517178 | 517178 | 517002 | Seq. ID No. 1978 |
| 980 | Seq. ID No. 1979 | 518090 | 518063 | 517239 | Seq. ID No. 1980 |
| 981a | Seq. ID No. 1981 | 517537 | 517717 | 517962 | Seq. ID No. 1982 |
| 982 | Seq. ID No. 1983 | 519084 | 519033 | 518146 | Seq. ID No. 1984 |
| 984a | Seq. ID No. 1985 | 519141 | 519309 | 519995 | Seq. ID No. 1986 |
| 984b | Seq. ID No. 1987 | 519141 | 519216 | 519995 | Seq. ID No. 1988 |
| 986 | Seq. ID No. 1989 | 520057 | 520066 | 521073 | Seq. ID No. 1990 |
| 987 | Seq. ID No. 1991 | 521626 | 521614 | 521147 | Seq. ID No. 1992 |
| 988a | Seq. ID No. 1993 | 522445 | 522070 | 521627 | Seq. ID No. 1994 |
| 988b | Seq. ID No. 1995 | 522445 | 522328 | 521627 | Seq. ID No. 1996 |
| 988c | Seq. ID No. 1997 | 522445 | 522391 | 521627 | Seq. ID No. 1998 |
| 988d | Seq. ID No. 1999 | 522445 | 522433 | 521627 | Seq. ID No. 2000 |
| 991 | Seq. ID No. 2001 | 522779 | 522782 | 523339 | Seq. ID No. 2002 |
| 992 | Seq. ID No. 2003 | 524472 | 524454 | 523420 | Seq. ID No. 2004 |
| 993 | Seq. ID No. 2005 | 523372 | 523387 | 524031 | Seq. ID No. 2006 |
| 994 | Seq. ID No. 2007 | 523709 | 523763 | 524269 | Seq. ID No. 2008 |
| 995 | Seq. ID No. 2009 | 524843 | 524789 | 524508 | Seq. ID No. 2010 |
| 997 | Seq. ID No. 2011 | 525316 | 525151 | 525044 | Seq. ID No. 2012 |
| 998a | Seq. ID No. 2013 | 524933 | 524999 | 525658 | Seq. ID No. 2014 |
| 998b | Seq. ID No. 2015 | 524933 | 524939 | 525658 | Seq. ID No. 2016 |
| 999a | Seq. ID No. 2017 | 526067 | 526016 | 525789 | Seq. ID No. 2018 |
| 999b | Seq. ID No. 2019 | 526067 | 526058 | 525789 | Seq. ID No. 2020 |
| 1000 | Seq. ID No. 2021 | 526066 | 526141 | 526833 | Seq. ID No. 2022 |
| 1001 | Seq. ID No. 2023 | 526853 | 526853 | 527035 | Seq. ID No. 2024 |
| 1003a | Seq. ID No. 2025 | 529482 | 529476 | 529228 | Seq. ID No. 2026 |
| 1003b | Seq. ID No. 2027 | 529482 | 529482 | 529228 | Seq. ID No. 2028 |

TABLE 2: ALL CLAIMED ORFS

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 1004a | Seq. ID No. 2029 | 527320 | 527350 | 529245 | Seq. ID No. 2030 |
| 1004b | Seq. ID No. 2031 | 527320 | 527335 | 529245 | Seq. ID No. 2032 |
| 1006a | Seq. ID No. 2033 | 529232 | 529352 | 530305 | Seq. ID No. 2034 |
| 1006b | Seq. ID No. 2035 | 529232 | 529289 | 530305 | Seq. ID No. 2036 |
| 1007 | Seq. ID No. 2037 | 531623 | 531593 | 530370 | Seq. ID No. 2038 |
| 1012 | Seq. ID No. 2039 | 531856 | 531856 | 531972 | Seq. ID No. 2040 |
| 1013a | Seq. ID No. 2041 | 532239 | 532698 | 533411 | Seq. ID No. 2042 |
| 1013b | Seq. ID No. 2043 | 532239 | 532467 | 533411 | Seq. ID No. 2044 |
| 1013c | Seq. ID No. 2045 | 532239 | 532359 | 533411 | Seq. ID No. 2046 |
| 1016c | Seq. ID No. 2047 | 533402 | 533432 | 534148 | Seq. ID No. 2048 |
| 1017a | Seq. ID No. 2049 | 534103 | 534754 | 535266 | Seq. ID No. 2050 |
| 1017b | Seq. ID No. 2051 | 534103 | 534274 | 535266 | Seq. ID No. 2052 |
| 1017c | Seq. ID No. 2053 | 534103 | 534187 | 535266 | Seq. ID No. 2054 |
| 1017d | Seq. ID No. 2055 | 534103 | 534145 | 535266 | Seq. ID No. 2056 |
| 1018a | Seq. ID No. 2057 | 535957 | 535981 | 536787 | Seq. ID No. 2058 |
| 1018b | Seq. ID No. 2059 | 535957 | 535978 | 536787 | Seq. ID No. 2060 |
| 1021a | Seq. ID No. 2061 | 536726 | 536804 | 537688 | Seq. ID No. 2062 |
| 1021b | Seq. ID No. 2063 | 536726 | 536750 | 537688 | Seq. ID No. 2064 |
| 1021c | Seq. ID No. 2065 | 536726 | 536729 | 537688 | Seq. ID No. 2066 |
| 1024 | Seq. ID No. 2067 | 537700 | 537700 | 538749 | Seq. ID No. 2068 |
| 1025 | Seq. ID No. 2069 | 538763 | 538772 | 539779 | Seq. ID No. 2070 |
| 1026 | Seq. ID No. 2071 | 541222 | 541222 | 539954 | Seq. ID No. 2072 |
| 1029 | Seq. ID No. 2073 | 541559 | 541619 | 542479 | Seq. ID No. 2074 |
| 1033a | Seq. ID No. 2075 | 542702 | 542966 | 544783 | Seq. ID No. 2076 |
| 1033b | Seq. ID No. 2077 | 542702 | 542825 | 544783 | Seq. ID No. 2078 |
| 1033c | Seq. ID No. 2079 | 542702 | 542741 | 544783 | Seq. ID No. 2080 |
| 1035a | Seq. ID No. 2081 | 546793 | 546721 | 546416 | Seq. ID No. 2082 |
| 1035b | Seq. ID No. 2083 | 546793 | 546724 | 546416 | Seq. ID No. 2084 |
| 1035c | Seq. ID No. 2085 | 546793 | 546739 | 546416 | Seq. ID No. 2086 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 1036a | Seq. ID No. 2087 | 544924 | 545824 | 546423 | Seq. ID No. 2088 |
| 1036b | Seq. ID No. 2089 | 544924 | 544978 | 546423 | Seq. ID No. 2090 |
| 1036c | Seq. ID No. 2091 | 544924 | 544927 | 546423 | Seq. ID No. 2092 |
| 1037 | Seq. ID No. 2093 | 546420 | 546423 | 547151 | Seq. ID No. 2094 |
| 1039a | Seq. ID No. 2095 | 547314 | 547344 | 548114 | Seq. ID No. 2096 |
| 1039b | Seq. ID No. 2097 | 547314 | 547317 | 548114 | Seq. ID No. 2098 |
| 1041 | Seq. ID No. 2099 | 548111 | 548132 | 548725 | Seq. ID No. 2100 |
| 1042a | Seq. ID No. 2101 | 548729 | 548750 | 549646 | Seq. ID No. 2102 |
| 1042b | Seq. ID No. 2103 | 548729 | 548729 | 549646 | Seq. ID No. 2104 |
| 1044a | Seq. ID No. 2105 | 551333 | 551243 | 550767 | Seq. ID No. 2106 |
| 1044b | Seq. ID No. 2107 | 551333 | 551306 | 550767 | Seq. ID No. 2108 |
| 1044c | Seq. ID No. 2109 | 551333 | 551312 | 550767 | Seq. ID No. 2110 |
| 1044d | Seq. ID No. 2111 | 551333 | 551324 | 550767 | Seq. ID No. 2112 |
| 1047a | Seq. ID No. 2113 | 550332 | 550395 | 552098 | Seq. ID No. 2114 |
| 1047b | Seq. ID No. 2115 | 550332 | 550374 | 552098 | Seq. ID No. 2116 |
| 1049a | Seq. ID No. 2117 | 552053 | 552182 | 552889 | Seq. ID No. 2118 |
| 1049b | Seq. ID No. 2119 | 552053 | 552110 | 552889 | Seq. ID No. 2120 |
| 1050a | Seq. ID No. 2121 | 552811 | 553336 | 553635 | Seq. ID No. 2122 |
| 1050b | Seq. ID No. 2123 | 552811 | 552859 | 553635 | Seq. ID No. 2124 |
| 1050c | Seq. ID No. 2125 | 552811 | 552841 | 553635 | Seq. ID No. 2126 |
| 1050d | Seq. ID No. 2127 | 552811 | 552835 | 553635 | Seq. ID No. 2128 |
| 1055 | Seq. ID No. 2129 | 557181 | 557130 | 556642 | Seq. ID No. 2130 |
| 1056a | Seq. ID No. 2131 | 556313 | 556367 | 556645 | Seq. ID No. 2132 |
| 1056b | Seq. ID No. 2133 | 556313 | 556364 | 556645 | Seq. ID No. 2134 |
| 1057 | Seq. ID No. 2135 | 553741 | 553774 | 557208 | Seq. ID No. 2136 |
| 1058 | Seq. ID No. 2137 | 557389 | 557389 | 558231 | Seq. ID No. 2138 |
| 1060a | Seq. ID No. 2139 | 558338 | 558434 | 559720 | Seq. ID No. 2140 |
| 1060b | Seq. ID No. 2141 | 558338 | 558353 | 559720 | Seq. ID No. 2142 |
| 1062 | Seq. ID No. 2143 | 559708 | 559717 | 560406 | Seq. ID No. 2144 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 1063 | Seq. ID No. 2145 | 560912 | 560888 | 560631 | Seq. ID No. 2146 |
| 1064 | Seq. ID No. 2147 | 560346 | 560415 | 560714 | Seq. ID No. 2148 |
| 1065a | Seq. ID No. 2149 | 560743 | 560857 | 561312 | Seq. ID No. 2150 |
| 1065b | Seq. ID No. 2151 | 560743 | 560824 | 561312 | Seq. ID No. 2152 |
| 1065c | Seq. ID No. 2153 | 560743 | 560791 | 561312 | Seq. ID No. 2154 |
| 1066a | Seq. ID No. 2155 | 561721 | 561637 | 561359 | Seq. ID No. 2156 |
| 1066b | Seq. ID No. 2157 | 561721 | 561715 | 561359 | Seq. ID No. 2158 |
| 1067 | Seq. ID No. 2159 | 561384 | 561417 | 562028 | Seq. ID No. 2160 |
| 1069 | Seq. ID No. 2161 | 562186 | 562186 | 562629 | Seq. ID No. 2162 |
| 1070a | Seq. ID No. 2163 | 562626 | 562911 | 563282 | Seq. ID No. 2164 |
| 1070b | Seq. ID No. 2165 | 562626 | 562635 | 563282 | Seq. ID No. 2166 |
| 1076a | Seq. ID No. 2167 | 563437 | 563620 | 566925 | Seq. ID No. 2168 |
| 1076b | Seq. ID No. 2169 | 563437 | 563443 | 566925 | Seq. ID No. 2170 |
| 1077a | Seq. ID No. 2171 | 566894 | 568136 | 568525 | Seq. ID No. 2172 |
| 1077b | Seq. ID No. 2173 | 566894 | 567506 | 568525 | Seq. ID No. 2174 |
| 1077c | Seq. ID No. 2175 | 566894 | 567296 | 568525 | Seq. ID No. 2176 |
| 1077d | Seq. ID No. 2177 | 566894 | 567170 | 568525 | Seq. ID No. 2178 |
| 1077e | Seq. ID No. 2179 | 566894 | 566918 | 568525 | Seq. ID No. 2180 |
| 1079a | Seq. ID No. 2181 | 568458 | 568518 | 569591 | Seq. ID No. 2182 |
| 1079b | Seq. ID No. 2183 | 568458 | 568485 | 569591 | Seq. ID No. 2184 |
| 1080a | Seq. ID No. 2185 | 569461 | 569575 | 569865 | Seq. ID No. 2186 |
| 1081a | Seq. ID No. 2187 | 570009 | 570099 | 570491 | Seq. ID No. 2188 |
| 1081b | Seq. ID No. 2189 | 570009 | 570021 | 570491 | Seq. ID No. 2190 |
| 1082 | Seq. ID No. 2191 | 570545 | 570560 | 571390 | Seq. ID No. 2192 |
| 1085 | Seq. ID No. 2193 | 571448 | 571493 | 571930 | Seq. ID No. 2194 |
| 1086 | Seq. ID No. 2195 | 572006 | 572021 | 573433 | Seq. ID No. 2196 |
| 1087a | Seq. ID No. 2197 | 573393 | 573438 | 573983 | Seq. ID No. 2198 |
| 1087b | Seq. ID No. 2199 | 573393 | 573402 | 573983 | Seq. ID No. 2200 |
| 1091a | Seq. ID No. 2201 | 574840 | 574903 | 575133 | Seq. ID No. 2202 |

TABLE 2: ALL CLAIMED ORFS

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 1091b | Seq. ID No. 2203 | 574840 | 574888 | 575133 | Seq. ID No. 2204 |
| 1094a | Seq. ID No. 2205 | 574083 | 574122 | 576380 | Seq. ID No. 2206 |
| 1094b | Seq. ID No. 2207 | 574083 | 574110 | 576380 | Seq. ID No. 2208 |
| 1095a | Seq. ID No. 2209 | 575929 | 575968 | 576420 | Seq. ID No. 2210 |
| 1095b | Seq. ID No. 2211 | 575929 | 575950 | 576420 | Seq. ID No. 2212 |
| 1096a | Seq. ID No. 2213 | 576567 | 576657 | 577469 | Seq. ID No. 2214 |
| 1096b | Seq. ID No. 2215 | 576567 | 576597 | 577469 | Seq. ID No. 2216 |
| 1096c | Seq. ID No. 2217 | 576567 | 576585 | 577469 | Seq. ID No. 2218 |
| 1097 | Seq. ID No. 2219 | 577758 | 577839 | 578270 | Seq. ID No. 2220 |
| 1098b | Seq. ID No. 2221 | 578304 | 578304 | 578753 | Seq. ID No. 2222 |
| 1100 | Seq. ID No. 2223 | 578719 | 578740 | 579318 | Seq. ID No. 2224 |
| 1101a | Seq. ID No. 2225 | 579319 | 579388 | 579663 | Seq. ID No. 2226 |
| 1101b | Seq. ID No. 2227 | 579319 | 579325 | 579663 | Seq. ID No. 2228 |
| 1104 | Seq. ID No. 2229 | 579892 | 579925 | 580959 | Seq. ID No. 2230 |
| 1106 | Seq. ID No. 2231 | 581018 | 581033 | 581344 | Seq. ID No. 2232 |
| 1108a | Seq. ID No. 2233 | 581194 | 581413 | 582546 | Seq. ID No. 2234 |
| 1108b | Seq. ID No. 2235 | 581194 | 581254 | 582546 | Seq. ID No. 2236 |
| 1111a | Seq. ID No. 2237 | 582575 | 582815 | 583843 | Seq. ID No. 2238 |
| 1111b | Seq. ID No. 2239 | 582575 | 582611 | 583843 | Seq. ID No. 2240 |
| 1111c | Seq. ID No. 2241 | 582575 | 582578 | 583843 | Seq. ID No. 2242 |
| 1112a | Seq. ID No. 2243 | 584607 | 584424 | 584239 | Seq. ID No. 2244 |
| 1125 | Seq. ID No. 2245 | 590309 | 590312 | 590752 | Seq. ID No. 2246 |
| 1126a | Seq. ID No. 2247 | 590674 | 590830 | 591966 | Seq. ID No. 2248 |
| 1126b | Seq. ID No. 2249 | 590674 | 590749 | 591966 | Seq. ID No. 2250 |
| 1126c | Seq. ID No. 2251 | 590674 | 590734 | 591966 | Seq. ID No. 2252 |
| 1127 | Seq. ID No. 2253 | 591927 | 591963 | 592610 | Seq. ID No. 2254 |
| 1128 | Seq. ID No. 2255 | 592612 | 592612 | 592767 | Seq. ID No. 2256 |
| 1131 | Seq. ID No. 2257 | 593102 | 593108 | 594118 | Seq. ID No. 2258 |
| 1132 | Seq. ID No. 2259 | 594208 | 594211 | 595179 | Seq. ID No. 2260 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 1135a | Seq. ID No. 2261 | 595339 | 595396 | 596805 | Seq. ID No. 2262 |
| 1135b | Seq. ID No. 2263 | 595339 | 595381 | 596805 | Seq. ID No. 2264 |
| 1136a | Seq. ID No. 2265 | 598288 | 598243 | 596903 | Seq. ID No. 2266 |
| 1136b | Seq. ID No. 2267 | 598288 | 598267 | 596903 | Seq. ID No. 2268 |
| 1138 | Seq. ID No. 2269 | 599921 | 599849 | 598668 | Seq. ID No. 2270 |
| 1140a | Seq. ID No. 2271 | 602187 | 601377 | 600247 | Seq. ID No. 2272 |
| 1140b | Seq. ID No. 2273 | 602187 | 601914 | 600247 | Seq. ID No. 2274 |
| 1140c | Seq. ID No. 2275 | 602187 | 602187 | 600247 | Seq. ID No. 2276 |
| 1141a | Seq. ID No. 2277 | 600251 | 600302 | 600556 | Seq. ID No. 2278 |
| 1141b | Seq. ID No. 2279 | 600251 | 600257 | 600556 | Seq. ID No. 2280 |
| 1142 | Seq. ID No. 2281 | 602718 | 602700 | 602377 | Seq. ID No. 2282 |
| 1144a | Seq. ID No. 2283 | 602866 | 603421 | 603672 | Seq. ID No. 2284 |
| 1144b | Seq. ID No. 2285 | 602866 | 602962 | 603672 | Seq. ID No. 2286 |
| 1144c | Seq. ID No. 2287 | 602866 | 602893 | 603672 | Seq. ID No. 2288 |
| 1146a | Seq. ID No. 2289 | 603660 | 604296 | 604598 | Seq. ID No. 2290 |
| 1146b | Seq. ID No. 2291 | 603660 | 604140 | 604598 | Seq. ID No. 2292 |
| 1146c | Seq. ID No. 2293 | 603660 | 603963 | 604598 | Seq. ID No. 2294 |
| 1146d | Seq. ID No. 2295 | 603660 | 603828 | 604598 | Seq. ID No. 2296 |
| 1146e | Seq. ID No. 2297 | 603660 | 603675 | 604598 | Seq. ID No. 2298 |
| 1148 | Seq. ID No. 2299 | 604610 | 604631 | 605278 | Seq. ID No. 2300 |
| 1149 | Seq. ID No. 2301 | 607200 | 607170 | 605347 | Seq. ID No. 2302 |
| 1152a | Seq. ID No. 2303 | 607234 | 608383 | 608667 | Seq. ID No. 2304 |
| 1152b | Seq. ID No. 2305 | 607234 | 607984 | 608667 | Seq. ID No. 2306 |
| 1152c | Seq. ID No. 2307 | 607234 | 607690 | 608667 | Seq. ID No. 2308 |
| 1152d | Seq. ID No. 2309 | 607234 | 607429 | 608667 | Seq. ID No. 2310 |
| 1152e | Seq. ID No. 2311 | 607234 | 607297 | 608667 | Seq. ID No. 2312 |
| 1152f | Seq. ID No. 2313 | 607234 | 607261 | 608667 | Seq. ID No. 2314 |
| 1152g | Seq. ID No. 2315 | 607234 | 607252 | 608667 | Seq. ID No. 2316 |
| 1155a | Seq. ID No. 2317 | 608668 | 609631 | 610128 | Seq. ID No. 2318 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 1155b | Seq. ID No. 2319 | 608668 | 609508 | 610128 | Seq. ID No. 2320 |
| 1155c | Seq. ID No. 2321 | 608668 | 609319 | 610128 | Seq. ID No. 2322 |
| 1155d | Seq. ID No. 2323 | 608668 | 609193 | 610128 | Seq. ID No. 2324 |
| 1155e | Seq. ID No. 2325 | 608668 | 608896 | 610128 | Seq. ID No. 2326 |
| 1155f | Seq. ID No. 2327 | 608668 | 608683 | 610128 | Seq. ID No. 2328 |
| 1155g | Seq. ID No. 2329 | 608668 | 608671 | 610128 | Seq. ID No. 2330 |
| 1158a | Seq. ID No. 2331 | 610088 | 610232 | 611965 | Seq. ID No. 2332 |
| 1158b | Seq. ID No. 2333 | 610088 | 610091 | 611965 | Seq. ID No. 2334 |
| 1160 | Seq. ID No. 2335 | 612095 | 612125 | 612553 | Seq. ID No. 2336 |
| 1161a | Seq. ID No. 2337 | 612672 | 612684 | 612935 | Seq. ID No. 2338 |
| 1161b | Seq. ID No. 2339 | 612672 | 612675 | 612935 | Seq. ID No. 2340 |
| 1162 | Seq. ID No. 2341 | 613141 | 613141 | 613064 | Seq. ID No. 2342 |
| 1165 | Seq. ID No. 2343 | 613461 | 613476 | 614456 | Seq. ID No. 2344 |
| 1166 | Seq. ID No. 2345 | 614621 | 614621 | 615358 | Seq. ID No. 2346 |
| 1167a | Seq. ID No. 2347 | 615351 | 615507 | 616433 | Seq. ID No. 2348 |
| 1167b | Seq. ID No. 2349 | 615351 | 615351 | 616433 | Seq. ID No. 2350 |
| 1168 | Seq. ID No. 2351 | 616628 | 616640 | 617020 | Seq. ID No. 2352 |
| 1169a | Seq. ID No. 2353 | 617085 | 618015 | 619262 | Seq. ID No. 2354 |
| 1169b | Seq. ID No. 2355 | 617085 | 617751 | 619262 | Seq. ID No. 2356 |
| 1169c | Seq. ID No. 2357 | 617085 | 617109 | 619262 | Seq. ID No. 2358 |
| 1170 | Seq. ID No. 2359 | 619263 | 619263 | 619499 | Seq. ID No. 2360 |
| 1171a | Seq. ID No. 2361 | 619429 | 619558 | 619929 | Seq. ID No. 2362 |
| 1171c | Seq. ID No. 2363 | 619429 | 619501 | 619929 | Seq. ID No. 2364 |
| 1172 | Seq. ID No. 2365 | 619930 | 619930 | 620520 | Seq. ID No. 2366 |
| 1173 | Seq. ID No. 2367 | 621124 | 621133 | 621411 | Seq. ID No. 2368 |
| 1174 | Seq. ID No. 2369 | 620736 | 620745 | 621947 | Seq. ID No. 2370 |
| 1175 | Seq. ID No. 2371 | 622379 | 622379 | 622125 | Seq. ID No. 2372 |
| 1177 | Seq. ID No. 2373 | 621934 | 621958 | 622941 | Seq. ID No. 2374 |
| 1178 | Seq. ID No. 2375 | 623806 | 623752 | 623462 | Seq. ID No. 2376 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 1179a | Seq. ID No. 2377 | 624467 | 624323 | 623553 | Seq. ID No. 2378 |
| 1179b | Seq. ID No. 2379 | 624467 | 624440 | 623553 | Seq. ID No. 2380 |
| 1179c | Seq. ID No. 2381 | 624467 | 624449 | 623553 | Seq. ID No. 2382 |
| 1180a | Seq. ID No. 2383 | 626331 | 625863 | 624772 | Seq. ID No. 2384 |
| 1180b | Seq. ID No. 2385 | 626331 | 626118 | 624772 | Seq. ID No. 2386 |
| 1180c | Seq. ID No. 2387 | 626331 | 626217 | 624772 | Seq. ID No. 2388 |
| 1180d | Seq. ID No. 2389 | 626331 | 626253 | 624772 | Seq. ID No. 2390 |
| 1180e | Seq. ID No. 2391 | 626331 | 626310 | 624772 | Seq. ID No. 2392 |
| 1182a | Seq. ID No. 2393 | 626734 | 626677 | 626441 | Seq. ID No. 2394 |
| 1182b | Seq. ID No. 2395 | 626734 | 626716 | 626441 | Seq. ID No. 2396 |
| 1183a | Seq. ID No. 2397 | 626391 | 626460 | 627632 | Seq. ID No. 2398 |
| 1183b | Seq. ID No. 2399 | 626391 | 626430 | 627632 | Seq. ID No. 2400 |
| 1184 | Seq. ID No. 2401 | 629315 | 629285 | 627993 | Seq. ID No. 2402 |
| 1185a | Seq. ID No. 2403 | 630076 | 629893 | 629300 | Seq. ID No. 2404 |
| 1185b | Seq. ID No. 2405 | 630076 | 630007 | 629300 | Seq. ID No. 2406 |
| 1186a | Seq. ID No. 2407 | 630394 | 630427 | 631026 | Seq. ID No. 2408 |
| 1186b | Seq. ID No. 2409 | 630394 | 630403 | 631026 | Seq. ID No. 2410 |
| 1188a | Seq. ID No. 2411 | 630986 | 631292 | 631714 | Seq. ID No. 2412 |
| 1188b | Seq. ID No. 2413 | 630986 | 631007 | 631714 | Seq. ID No. 2414 |
| 1188c | Seq. ID No. 2415 | 630986 | 630998 | 631714 | Seq. ID No. 2416 |
| 1191 | Seq. ID No. 2417 | 631666 | 631711 | 633153 | Seq. ID No. 2418 |
| 1192a | Seq. ID No. 2419 | 634110 | 634047 | 633199 | Seq. ID No. 2420 |
| 1192b | Seq. ID No. 2421 | 634110 | 634110 | 633199 | Seq. ID No. 2422 |
| 1194 | Seq. ID No. 2423 | 634701 | 634680 | 634123 | Seq. ID No. 2424 |
| 1196a | Seq. ID No. 2425 | 634859 | 634868 | 635863 | Seq. ID No. 2426 |
| 1196b | Seq. ID No. 2427 | 634859 | 634859 | 635863 | Seq. ID No. 2428 |
| 1197 | Seq. ID No. 2429 | 635887 | 635887 | 636759 | Seq. ID No. 2430 |
| 1198 | Seq. ID No. 2431 | 636665 | 636668 | 636898 | Seq. ID No. 2432 |
| 1199a | Seq. ID No. 2433 | 636828 | 636942 | 637436 | Seq. ID No. 2434 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 1199b | Seq. ID No. 2435 | 636828 | 636888 | 637436 | Seq. ID No. 2436 |
| 1200 | Seq. ID No. 2437 | 637555 | 637555 | 638352 | Seq. ID No. 2438 |
| 1201 | Seq. ID No. 2439 | 638346 | 638373 | 638648 | Seq. ID No. 2440 |
| 1202a | Seq. ID No. 2441 | 638811 | 638871 | 639152 | Seq. ID No. 2442 |
| 1202b | Seq. ID No. 2443 | 638811 | 638844 | 639152 | Seq. ID No. 2444 |
| 1205 | Seq. ID No. 2445 | 639692 | 639704 | 640546 | Seq. ID No. 2446 |
| 1206 | Seq. ID No. 2447 | 642187 | 642151 | 641477 | Seq. ID No. 2448 |
| 1207 | Seq. ID No. 2449 | 640543 | 640543 | 641538 | Seq. ID No. 2450 |
| 1208 | Seq. ID No. 2451 | 641532 | 641538 | 642890 | Seq. ID No. 2452 |
| 1209 | Seq. ID No. 2453 | 642972 | 642984 | 643718 | Seq. ID No. 2454 |
| 1210a | Seq. ID No. 2455 | 644513 | 644420 | 643800 | Seq. ID No. 2456 |
| 1210b | Seq. ID No. 2457 | 644513 | 644495 | 643800 | Seq. ID No. 2458 |
| 1212 | Seq. ID No. 2459 | 646415 | 646403 | 646137 | Seq. ID No. 2460 |
| 1213a | Seq. ID No. 2461 | 644672 | 644684 | 646174 | Seq. ID No. 2462 |
| 1213b | Seq. ID No. 2463 | 644672 | 644681 | 646174 | Seq. ID No. 2464 |
| 1214 | Seq. ID No. 2465 | 646171 | 646171 | 646944 | Seq. ID No. 2466 |
| 1215a | Seq. ID No. 2467 | 646895 | 647057 | 647500 | Seq. ID No. 2468 |
| 1215b | Seq. ID No. 2469 | 646895 | 646907 | 647500 | Seq. ID No. 2470 |
| 1217c | Seq. ID No. 2471 | 647452 | 647515 | 648060 | Seq. ID No. 2472 |
| 1218a | Seq. ID No. 2473 | 648023 | 648035 | 649042 | Seq. ID No. 2474 |
| 1218b | Seq. ID No. 2475 | 648023 | 648023 | 649042 | Seq. ID No. 2476 |
| 1219 | Seq. ID No. 2477 | 649847 | 649754 | 649371 | Seq. ID No. 2478 |
| 1220 | Seq. ID No. 2479 | 649953 | 649953 | 649813 | Seq. ID No. 2480 |
| 1221a | Seq. ID No. 2481 | 652043 | 652016 | 650058 | Seq. ID No. 2482 |
| 1221b | Seq. ID No. 2483 | 652043 | 652037 | 650058 | Seq. ID No. 2484 |
| 1223 | Seq. ID No. 2485 | 652187 | 652208 | 652873 | Seq. ID No. 2486 |
| 1224a | Seq. ID No. 2487 | 653833 | 653740 | 653129 | Seq. ID No. 2488 |
| 1224b | Seq. ID No. 2489 | 653833 | 653791 | 653129 | Seq. ID No. 2490 |
| 1224c | Seq. ID No. 2491 | 653833 | 653824 | 653129 | Seq. ID No. 2492 |

TABLE 2: ALL CLAIMED ORFS

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 1225 | Seq. ID No. 2493 | 654455 | 654434 | 653970 | Seq. ID No. 2494 |
| 1226 | Seq. ID No. 2495 | 654010 | 654010 | 654294 | Seq. ID No. 2496 |
| 1228a | Seq. ID No. 2497 | 655583 | 655400 | 655020 | Seq. ID No. 2498 |
| 1228b | Seq. ID No. 2499 | 655583 | 655562 | 655020 | Seq. ID No. 2500 |
| 1229b | Seq. ID No. 2501 | 656021 | 655988 | 655689 | Seq. ID No. 2502 |
| 1229c | Seq. ID No. 2503 | 656021 | 655994 | 655689 | Seq. ID No. 2504 |
| 1230 | Seq. ID No. 2505 | 654334 | 654337 | 655968 | Seq. ID No. 2506 |
| 1231 | Seq. ID No. 2507 | 656741 | 656720 | 656064 | Seq. ID No. 2508 |
| 1233a | Seq. ID No. 2509 | 656808 | 656892 | 657533 | Seq. ID No. 2510 |
| 1233b | Seq. ID No. 2511 | 656808 | 656874 | 657533 | Seq. ID No. 2512 |
| 1233c | Seq. ID No. 2513 | 656808 | 656871 | 657533 | Seq. ID No. 2514 |
| 1234a | Seq. ID No. 2515 | 657534 | 657801 | 658301 | Seq. ID No. 2516 |
| 1234b | Seq. ID No. 2517 | 657534 | 657744 | 658301 | Seq. ID No. 2518 |
| 1234c | Seq. ID No. 2519 | 657534 | 657537 | 658301 | Seq. ID No. 2520 |
| 1235 | Seq. ID No. 2521 | 658795 | 658795 | 658484 | Seq. ID No. 2522 |
| 1236a | Seq. ID No. 2523 | 659168 | 659063 | 658815 | Seq. ID No. 2524 |
| 1237 | Seq. ID No. 2525 | 658446 | 658503 | 659438 | Seq. ID No. 2526 |
| 1239 | Seq. ID No. 2527 | 659964 | 659976 | 660188 | Seq. ID No. 2528 |
| 1240 | Seq. ID No. 2529 | 661436 | 661367 | 660249 | Seq. ID No. 2530 |
| 1241a | Seq. ID No. 2531 | 661467 | 662226 | 662597 | Seq. ID No. 2532 |
| 1241b | Seq. ID No. 2533 | 661467 | 661497 | 662597 | Seq. ID No. 2534 |
| 1241c | Seq. ID No. 2535 | 661467 | 661479 | 662597 | Seq. ID No. 2536 |
| 1243 | Seq. ID No. 2537 | 662682 | 662682 | 663986 | Seq. ID No. 2538 |
| 1244 | Seq. ID No. 2539 | 664168 | 664189 | 664956 | Seq. ID No. 2540 |
| 1245a | Seq. ID No. 2541 | 666679 | 665737 | 665099 | Seq. ID No. 2542 |
| 1245b | Seq. ID No. 2543 | 666679 | 666304 | 665099 | Seq. ID No. 2544 |
| 1245c | Seq. ID No. 2545 | 666679 | 666400 | 665099 | Seq. ID No. 2546 |
| 1245d | Seq. ID No. 2547 | 666679 | 666649 | 665099 | Seq. ID No. 2548 |
| 1245e | Seq. ID No. 2549 | 666679 | 666658 | 665099 | Seq. ID No. 2550 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 1246a | Seq. ID No. 2551 | 667345 | 667318 | 666701 | Seq. ID No. 2552 |
| 1246b | Seq. ID No. 2553 | 667345 | 667327 | 666701 | Seq. ID No. 2554 |
| 1250a | Seq. ID No. 2555 | 667704 | 668655 | 668966 | Seq. ID No. 2556 |
| 1250b | Seq. ID No. 2557 | 667704 | 667953 | 668966 | Seq. ID No. 2558 |
| 1250c | Seq. ID No. 2559 | 667704 | 667830 | 668966 | Seq. ID No. 2560 |
| 1250d | Seq. ID No. 2561 | 667704 | 667782 | 668966 | Seq. ID No. 2562 |
| 1250e | Seq. ID No. 2563 | 667704 | 667746 | 668966 | Seq. ID No. 2564 |
| 1251a | Seq. ID No. 2565 | 669339 | 669444 | 669770 | Seq. ID No. 2566 |
| 1251b | Seq. ID No. 2567 | 669339 | 669420 | 669770 | Seq. ID No. 2568 |
| 1253a | Seq. ID No. 2569 | 669718 | 670432 | 670668 | Seq. ID No. 2570 |
| 1253b | Seq. ID No. 2571 | 669718 | 670354 | 670668 | Seq. ID No. 2572 |
| 1253c | Seq. ID No. 2573 | 669718 | 669841 | 670668 | Seq. ID No. 2574 |
| 1253d | Seq. ID No. 2575 | 669718 | 669808 | 670668 | Seq. ID No. 2576 |
| 1256 | Seq. ID No. 2577 | 670771 | 670801 | 672036 | Seq. ID No. 2578 |
| 1257a | Seq. ID No. 2579 | 671964 | 672051 | 672518 | Seq. ID No. 2580 |
| 1257b | Seq. ID No. 2581 | 671964 | 672048 | 672518 | Seq. ID No. 2582 |
| 1258a | Seq. ID No. 2583 | 675281 | 674429 | 672591 | Seq. ID No. 2584 |
| 1258b | Seq. ID No. 2585 | 675281 | 675200 | 672591 | Seq. ID No. 2586 |
| 1258c | Seq. ID No. 2587 | 675281 | 675221 | 672591 | Seq. ID No. 2588 |
| 1258d | Seq. ID No. 2589 | 675281 | 675278 | 672591 | Seq. ID No. 2590 |
| 1260 | Seq. ID No. 2591 | 672895 | 672934 | 673179 | Seq. ID No. 2592 |
| 1263 | Seq. ID No. 2593 | 675596 | 675608 | 676525 | Seq. ID No. 2594 |
| 1265 | Seq. ID No. 2595 | 676530 | 676545 | 677219 | Seq. ID No. 2596 |
| 1266a | Seq. ID No. 2597 | 677365 | 677401 | 678045 | Seq. ID No. 2598 |
| 1266b | Seq. ID No. 2599 | 677365 | 677365 | 678045 | Seq. ID No. 2600 |
| 1267a | Seq. ID No. 2601 | 678014 | 678107 | 678361 | Seq. ID No. 2602 |
| 1267b | Seq. ID No. 2603 | 678014 | 678038 | 678361 | Seq. ID No. 2604 |
| 1268a | Seq. ID No. 2605 | 680490 | 680229 | 678862 | Seq. ID No. 2606 |
| 1268b | Seq. ID No. 2607 | 680490 | 680436 | 678862 | Seq. ID No. 2608 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 1269 | Seq. ID No. 2609 | 680591 | 680612 | 681463 | Seq. ID No. 2610 |
| 1270 | Seq. ID No. 2611 | 682595 | 682535 | 682245 | Seq. ID No. 2612 |
| 1271 | Seq. ID No. 2613 | 681643 | 681646 | 683115 | Seq. ID No. 2614 |
| 1272a | Seq. ID No. 2615 | 684311 | 684107 | 683223 | Seq. ID No. 2616 |
| 1272b | Seq. ID No. 2617 | 684311 | 684308 | 683223 | Seq. ID No. 2618 |
| 1273 | Seq. ID No. 2619 | 685392 | 685377 | 684289 | Seq. ID No. 2620 |
| 1275a | Seq. ID No. 2621 | 686415 | 686145 | 685393 | Seq. ID No. 2622 |
| 1275b | Seq. ID No. 2623 | 686415 | 686403 | 685393 | Seq. ID No. 2624 |
| 1277 | Seq. ID No. 2625 | 687376 | 687349 | 686396 | Seq. ID No. 2626 |
| 1278a | Seq. ID No. 2627 | 686400 | 686439 | 686732 | Seq. ID No. 2628 |
| 1278b | Seq. ID No. 2629 | 686400 | 686406 | 686732 | Seq. ID No. 2630 |
| 1279 | Seq. ID No. 2631 | 687461 | 687506 | 688435 | Seq. ID No. 2632 |
| 1281 | Seq. ID No. 2633 | 688554 | 688557 | 689963 | Seq. ID No. 2634 |
| 1283a | Seq. ID No. 2635 | 690164 | 690239 | 691681 | Seq. ID No. 2636 |
| 1283b | Seq. ID No. 2637 | 690164 | 690212 | 691681 | Seq. ID No. 2638 |
| 1283c | Seq. ID No. 2639 | 690164 | 690182 | 691681 | Seq. ID No. 2640 |
| 1284 | Seq. ID No. 2641 | 691675 | 691681 | 692520 | Seq. ID No. 2642 |
| 1285a | Seq. ID No. 2643 | 692499 | 692535 | 693674 | Seq. ID No. 2644 |
| 1285b | Seq. ID No. 2645 | 692499 | 692502 | 693674 | Seq. ID No. 2646 |
| 1287a | Seq. ID No. 2647 | 693675 | 693741 | 694412 | Seq. ID No. 2648 |
| 1287b | Seq. ID No. 2649 | 693675 | 693696 | 694412 | Seq. ID No. 2650 |
| 1288 | Seq. ID No. 2651 | 696061 | 696046 | 695036 | Seq. ID No. 2652 |
| 1289 | Seq. ID No. 2653 | 695318 | 695384 | 695629 | Seq. ID No. 2654 |
| 1290 | Seq. ID No. 2655 | 696712 | 696700 | 696062 | Seq. ID No. 2656 |
| 1293a | Seq. ID No. 2657 | 696820 | 697045 | 698178 | Seq. ID No. 2658 |
| 1293b | Seq. ID No. 2659 | 696820 | 696829 | 698178 | Seq. ID No. 2660 |
| 1294a | Seq. ID No. 2661 | 698539 | 698527 | 698231 | Seq. ID No. 2662 |
| 1295 | Seq. ID No. 2663 | 698150 | 698171 | 698863 | Seq. ID No. 2664 |
| 1297a | Seq. ID No. 2665 | 699177 | 699198 | 699776 | Seq. ID No. 2666 |

TABLE 2: ALL CLAIMED ORFS

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 1297b | Seq. ID No. 2667 | 699177 | 699180 | 699776 | Seq. ID No. 2668 |
| 1300 | Seq. ID No. 2669 | 699972 | 699981 | 702449 | Seq. ID No. 2670 |
| 1302 | Seq. ID No. 2671 | 702563 | 702629 | 703615 | Seq. ID No. 2672 |
| 1305a | Seq. ID No. 2673 | 703701 | 703719 | 704396 | Seq. ID No. 2674 |
| 1305b | Seq. ID No. 2675 | 703701 | 703710 | 704396 | Seq. ID No. 2676 |
| 1305c | Seq. ID No. 2677 | 703701 | 703701 | 704396 | Seq. ID No. 2678 |
| 1308a | Seq. ID No. 2679 | 704332 | 704872 | 705273 | Seq. ID No. 2680 |
| 1308b | Seq. ID No. 2681 | 704332 | 704452 | 705273 | Seq. ID No. 2682 |
| 1308c | Seq. ID No. 2683 | 704332 | 704362 | 705273 | Seq. ID No. 2684 |
| 1308d | Seq. ID No. 2685 | 704332 | 704344 | 705273 | Seq. ID No. 2686 |
| 1308e | Seq. ID No. 2687 | 704332 | 704332 | 705273 | Seq. ID No. 2688 |
| 1311 | Seq. ID No. 2689 | 705580 | 705598 | 706314 | Seq. ID No. 2690 |
| 1314b | Seq. ID No. 2691 | 707728 | 707725 | 707432 | Seq. ID No. 2692 |
| 1315 | Seq. ID No. 2693 | 706311 | 706311 | 708119 | Seq. ID No. 2694 |
| 1316 | Seq. ID No. 2695 | 708319 | 708325 | 708573 | Seq. ID No. 2696 |
| 1317 | Seq. ID No. 2697 | 709234 | 709210 | 708947 | Seq. ID No. 2698 |
| 1318 | Seq. ID No. 2699 | 708258 | 708261 | 709274 | Seq. ID No. 2700 |
| 1319a | Seq. ID No. 2701 | 709369 | 709570 | 710250 | Seq. ID No. 2702 |
| 1319b | Seq. ID No. 2703 | 709369 | 709390 | 710250 | Seq. ID No. 2704 |
| 1320a | Seq. ID No. 2705 | 710244 | 710745 | 711068 | Seq. ID No. 2706 |
| 1320b | Seq. ID No. 2707 | 710244 | 710400 | 711068 | Seq. ID No. 2708 |
| 1320c | Seq. ID No. 2709 | 710244 | 710250 | 711068 | Seq. ID No. 2710 |
| 1321 | Seq. ID No. 2711 | 711047 | 711068 | 711586 | Seq. ID No. 2712 |
| 1322a | Seq. ID No. 2713 | 711571 | 711586 | 711831 | Seq. ID No. 2714 |
| 1322b | Seq. ID No. 2715 | 711571 | 711583 | 711831 | Seq. ID No. 2716 |
| 1323b | Seq. ID No. 2717 | 712308 | 712248 | 711997 | Seq. ID No. 2718 |
| 1324 | Seq. ID No. 2719 | 711914 | 711917 | 712600 | Seq. ID No. 2720 |
| 1326a | Seq. ID No. 2721 | 712714 | 712729 | 713361 | Seq. ID No. 2722 |
| 1326b | Seq. ID No. 2723 | 712714 | 712723 | 713361 | Seq. ID No. 2724 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 1326c | Seq. ID No. 2725 | 712714 | 712720 | 713361 | Seq. ID No. 2726 |
| 1333 | Seq. ID No. 2727 | 713541 | 713541 | 716393 | Seq. ID No. 2728 |
| 1334a | Seq. ID No. 2729 | 716775 | 716739 | 716479 | Seq. ID No. 2730 |
| 1334b | Seq. ID No. 2731 | 716775 | 716748 | 716479 | Seq. ID No. 2732 |
| 1335a | Seq. ID No. 2733 | 717513 | 717270 | 716776 | Seq. ID No. 2734 |
| 1335b | Seq. ID No. 2735 | 717513 | 717462 | 716776 | Seq. ID No. 2736 |
| 1337 | Seq. ID No. 2737 | 716522 | 716558 | 718135 | Seq. ID No. 2738 |
| 1338 | Seq. ID No. 2739 | 718855 | 718855 | 718586 | Seq. ID No. 2740 |
| 1340a | Seq. ID No. 2741 | 718451 | 718490 | 718822 | Seq. ID No. 2742 |
| 1340b | Seq. ID No. 2743 | 718451 | 718466 | 718822 | Seq. ID No. 2744 |
| 1341a | Seq. ID No. 2745 | 718816 | 718858 | 719163 | Seq. ID No. 2746 |
| 1341c | Seq. ID No. 2747 | 718816 | 718822 | 719163 | Seq. ID No. 2748 |
| 1344a | Seq. ID No. 2749 | 719333 | 719396 | 720334 | Seq. ID No. 2750 |
| 1344b | Seq. ID No. 2751 | 719333 | 719381 | 720334 | Seq. ID No. 2752 |
| 1348 | Seq. ID No. 2753 | 720382 | 720400 | 721263 | Seq. ID No. 2754 |
| 1349a | Seq. ID No. 2755 | 721264 | 721312 | 722295 | Seq. ID No. 2756 |
| 1349b | Seq. ID No. 2757 | 721264 | 721276 | 722295 | Seq. ID No. 2758 |
| 1349c | Seq. ID No. 2759 | 721264 | 721267 | 722295 | Seq. ID No. 2760 |
| 1350a | Seq. ID No. 2761 | 722342 | 722369 | 722797 | Seq. ID No. 2762 |
| 1350b | Seq. ID No. 2763 | 722342 | 722348 | 722797 | Seq. ID No. 2764 |
| 1353 | Seq. ID No. 2765 | 722851 | 722869 | 723843 | Seq. ID No. 2766 |
| 1355 | Seq. ID No. 2767 | 723944 | 723944 | 725668 | Seq. ID No. 2768 |
| 1358a | Seq. ID No. 2769 | 725732 | 725753 | 726643 | Seq. ID No. 2770 |
| 1358b | Seq. ID No. 2771 | 725732 | 725732 | 726643 | Seq. ID No. 2772 |
| 1359 | Seq. ID No. 2773 | 726616 | 726640 | 727635 | Seq. ID No. 2774 |
| 1361 | Seq. ID No. 2775 | 727639 | 727651 | 728580 | Seq. ID No. 2776 |
| 1364a | Seq. ID No. 2777 | 730140 | 730065 | 729379 | Seq. ID No. 2778 |
| 1364b | Seq. ID No. 2779 | 730140 | 730092 | 729379 | Seq. ID No. 2780 |
| 1364c | Seq. ID No. 2781 | 730140 | 730107 | 729379 | Seq. ID No. 2782 |

TABLE 2: ALL CLAIMED ORFS

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 1365b | Seq. ID No. 2783 | 729761 | 729827 | 730129 | Seq. ID No. 2784 |
| 1366a | Seq. ID No. 2785 | 730210 | 730483 | 730836 | Seq. ID No. 2786 |
| 1366b | Seq. ID No. 2787 | 730210 | 730243 | 730836 | Seq. ID No. 2788 |
| 1367 | Seq. ID No. 2789 | 730970 | 730988 | 732001 | Seq. ID No. 2790 |
| 1368 | Seq. ID No. 2791 | 732002 | 732038 | 733033 | Seq. ID No. 2792 |
| 1371 | Seq. ID No. 2793 | 733169 | 733175 | 734359 | Seq. ID No. 2794 |
| 1373a | Seq. ID No. 2795 | 734383 | 734389 | 735144 | Seq. ID No. 2796 |
| 1373b | Seq. ID No. 2797 | 734383 | 734386 | 735144 | Seq. ID No. 2798 |
| 1374 | Seq. ID No. 2799 | 735111 | 735144 | 736679 | Seq. ID No. 2800 |
| 1375 | Seq. ID No. 2801 | 737472 | 737457 | 737191 | Seq. ID No. 2802 |
| 1377 | Seq. ID No. 2803 | 736676 | 736730 | 738028 | Seq. ID No. 2804 |
| 1378 | Seq. ID No. 2805 | 738364 | 738346 | 738119 | Seq. ID No. 2806 |
| 1379 | Seq. ID No. 2807 | 738645 | 738612 | 738340 | Seq. ID No. 2808 |
| 1380 | Seq. ID No. 2809 | 738987 | 738954 | 738646 | Seq. ID No. 2810 |
| 1381a | Seq. ID No. 2811 | 738197 | 738560 | 739288 | Seq. ID No. 2812 |
| 1381b | Seq. ID No. 2813 | 738197 | 738221 | 739288 | Seq. ID No. 2814 |
| 1382 | Seq. ID No. 2815 | 739289 | 739298 | 739879 | Seq. ID No. 2816 |
| 1383 | Seq. ID No. 2817 | 739834 | 739906 | 740064 | Seq. ID No. 2818 |
| 1384a | Seq. ID No. 2819 | 740592 | 740637 | 740843 | Seq. ID No. 2820 |
| 1384b | Seq. ID No. 2821 | 740592 | 740613 | 740843 | Seq. ID No. 2822 |
| 1384c | Seq. ID No. 2823 | 740592 | 740607 | 740843 | Seq. ID No. 2824 |
| 1386a | Seq. ID No. 2825 | 740904 | 740955 | 741692 | Seq. ID No. 2826 |
| 1386b | Seq. ID No. 2827 | 740904 | 740949 | 741692 | Seq. ID No. 2828 |
| 1387a | Seq. ID No. 2829 | 742161 | 741981 | 741694 | Seq. ID No. 2830 |
| 1388b | Seq. ID No. 2831 | 741439 | 741448 | 741723 | Seq. ID No. 2832 |
| 1389a | Seq. ID No. 2833 | 742245 | 742329 | 742586 | Seq. ID No. 2834 |
| 1393a | Seq. ID No. 2835 | 744190 | 744004 | 743774 | Seq. ID No. 2836 |
| 1393b | Seq. ID No. 2837 | 744190 | 744088 | 743774 | Seq. ID No. 2838 |
| 1393c | Seq. ID No. 2839 | 744190 | 744118 | 743774 | Seq. ID No. 2840 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 1393d | Seq. ID No. 2841 | 744190 | 744172 | 743774 | Seq. ID No. 2842 |
| 1394 | Seq. ID No. 2843 | 741716 | 741716 | 744145 | Seq. ID No. 2844 |
| 1395a | Seq. ID No. 2845 | 743835 | 743886 | 744179 | Seq. ID No. 2846 |
| 1396 | Seq. ID No. 2847 | 744166 | 744166 | 744624 | Seq. ID No. 2848 |
| 1397 | Seq. ID No. 2849 | 745009 | 745003 | 744779 | Seq. ID No. 2850 |
| 1398 | Seq. ID No. 2851 | 745395 | 745395 | 745583 | Seq. ID No. 2852 |
| 1399a | Seq. ID No. 2853 | 746205 | 746151 | 745810 | Seq. ID No. 2854 |
| 1399b | Seq. ID No. 2855 | 746205 | 746178 | 745810 | Seq. ID No. 2856 |
| 1400 | Seq. ID No. 2857 | 745613 | 745613 | 745813 | Seq. ID No. 2858 |
| 1401 | Seq. ID No. 2859 | 745943 | 745943 | 746104 | Seq. ID No. 2860 |
| 1402c | Seq. ID No. 2861 | 746612 | 746558 | 746190 | Seq. ID No. 2862 |
| 1405 | Seq. ID No. 2863 | 746924 | 746924 | 749635 | Seq. ID No. 2864 |
| 1407b | Seq. ID No. 2865 | 751061 | 751055 | 750588 | Seq. ID No. 2866 |
| 1408 | Seq. ID No. 2867 | 749626 | 749647 | 751767 | Seq. ID No. 2868 |
| 1409 | Seq. ID No. 2869 | 751768 | 751768 | 754359 | Seq. ID No. 2870 |
| 1410 | Seq. ID No. 2871 | 754341 | 754374 | 755108 | Seq. ID No. 2872 |
| 1411a | Seq. ID No. 2873 | 755080 | 755485 | 755841 | Seq. ID No. 2874 |
| 1411b | Seq. ID No. 2875 | 755080 | 755344 | 755841 | Seq. ID No. 2876 |
| 1411c | Seq. ID No. 2877 | 755080 | 755092 | 755841 | Seq. ID No. 2878 |
| 1412a | Seq. ID No. 2879 | 757589 | 757421 | 756222 | Seq. ID No. 2880 |
| 1412b | Seq. ID No. 2881 | 757589 | 757586 | 756222 | Seq. ID No. 2882 |
| 1414a | Seq. ID No. 2883 | 756988 | 757285 | 757674 | Seq. ID No. 2884 |
| 1414b | Seq. ID No. 2885 | 756988 | 757180 | 757674 | Seq. ID No. 2886 |
| 1414c | Seq. ID No. 2887 | 756988 | 757003 | 757674 | Seq. ID No. 2888 |
| 1415 | Seq. ID No. 2889 | 758110 | 758110 | 758241 | Seq. ID No. 2890 |
| 1416 | Seq. ID No. 2891 | 759768 | 759735 | 758569 | Seq. ID No. 2892 |
| 1418 | Seq. ID No. 2893 | 758771 | 758771 | 759010 | Seq. ID No. 2894 |
| 1419 | Seq. ID No. 2895 | 760783 | 760735 | 760511 | Seq. ID No. 2896 |
| 1420a | Seq. ID No. 2897 | 760029 | 760194 | 760772 | Seq. ID No. 2898 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 1420b | Seq. ID No. 2899 | 760029 | 760029 | 760772 | Seq. ID No. 2900 |
| 1422 | Seq. ID No. 2901 | 760703 | 760775 | 762157 | Seq. ID No. 2902 |
| 1423 | Seq. ID No. 2903 | 762262 | 762283 | 762516 | Seq. ID No. 2904 |
| 1426a | Seq. ID No. 2905 | 762510 | 762915 | 763571 | Seq. ID No. 2906 |
| 1426b | Seq. ID No. 2907 | 762510 | 762528 | 763571 | Seq. ID No. 2908 |
| 1427a | Seq. ID No. 2909 | 763552 | 763810 | 763941 | Seq. ID No. 2910 |
| 1427b | Seq. ID No. 2911 | 763552 | 763564 | 763941 | Seq. ID No. 2912 |
| 1428 | Seq. ID No. 2913 | 763895 | 763949 | 764311 | Seq. ID No. 2914 |
| 1429a | Seq. ID No. 2915 | 765122 | 765107 | 764379 | Seq. ID No. 2916 |
| 1429b | Seq. ID No. 2917 | 765122 | 765116 | 764379 | Seq. ID No. 2918 |
| 1431 | Seq. ID No. 2919 | 765350 | 765365 | 766138 | Seq. ID No. 2920 |
| 1432 | Seq. ID No. 2921 | 766139 | 766154 | 767452 | Seq. ID No. 2922 |
| 1433 | Seq. ID No. 2923 | 767422 | 767449 | 768687 | Seq. ID No. 2924 |
| 1434a | Seq. ID No. 2925 | 768641 | 768761 | 769153 | Seq. ID No. 2926 |
| 1434b | Seq. ID No. 2927 | 768641 | 768674 | 769153 | Seq. ID No. 2928 |
| 1437a | Seq. ID No. 2929 | 769101 | 769194 | 770588 | Seq. ID No. 2930 |
| 1437b | Seq. ID No. 2931 | 769101 | 769185 | 770588 | Seq. ID No. 2932 |
| 1437c | Seq. ID No. 2933 | 769101 | 769119 | 770588 | Seq. ID No. 2934 |
| 1438 | Seq. ID No. 2935 | 771081 | 771093 | 771485 | Seq. ID No. 2936 |
| 1439a | Seq. ID No. 2937 | 771556 | 772081 | 772368 | Seq. ID No. 2938 |
| 1439b | Seq. ID No. 2939 | 771556 | 771832 | 772368 | Seq. ID No. 2940 |
| 1439c | Seq. ID No. 2941 | 771556 | 771688 | 772368 | Seq. ID No. 2942 |
| 1439d | Seq. ID No. 2943 | 771556 | 771565 | 772368 | Seq. ID No. 2944 |
| 1439e | Seq. ID No. 2945 | 771556 | 771556 | 772368 | Seq. ID No. 2946 |
| 1440a | Seq. ID No. 2947 | 772260 | 773019 | 773900 | Seq. ID No. 2948 |
| 1440b | Seq. ID No. 2949 | 772260 | 772659 | 773900 | Seq. ID No. 2950 |
| 1440c | Seq. ID No. 2951 | 772260 | 772371 | 773900 | Seq. ID No. 2952 |
| 1440d | Seq. ID No. 2953 | 772260 | 772347 | 773900 | Seq. ID No. 2954 |
| 1442a | Seq. ID No. 2955 | 773837 | 774053 | 774535 | Seq. ID No. 2956 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 1442b | Seq. ID No. 2957 | 773837 | 773897 | 774535 | Seq. ID No. 2958 |
| 1445a | Seq. ID No. 2959 | 774811 | 775252 | 775797 | Seq. ID No. 2960 |
| 1445b | Seq. ID No. 2961 | 774811 | 775042 | 775797 | Seq. ID No. 2962 |
| 1445c | Seq. ID No. 2963 | 774811 | 774853 | 775797 | Seq. ID No. 2964 |
| 1446a | Seq. ID No. 2965 | 776293 | 776224 | 775967 | Seq. ID No. 2966 |
| 1446b | Seq. ID No. 2967 | 776293 | 776278 | 775967 | Seq. ID No. 2968 |
| 1447a | Seq. ID No. 2969 | 776362 | 776419 | 777786 | Seq. ID No. 2970 |
| 1447b | Seq. ID No. 2971 | 776362 | 776377 | 777786 | Seq. ID No. 2972 |
| 1448 | Seq. ID No. 2973 | 778141 | 778195 | 778794 | Seq. ID No. 2974 |
| 1449a | Seq. ID No. 2975 | 778847 | 778862 | 779716 | Seq. ID No. 2976 |
| 1449b | Seq. ID No. 2977 | 778847 | 778853 | 779716 | Seq. ID No. 2978 |
| 1451 | Seq. ID No. 2979 | 779700 | 779706 | 780320 | Seq. ID No. 2980 |
| 1452a | Seq. ID No. 2981 | 780286 | 780310 | 781452 | Seq. ID No. 2982 |
| 1452b | Seq. ID No. 2983 | 780286 | 780295 | 781452 | Seq. ID No. 2984 |
| 1453 | Seq. ID No. 2985 | 781774 | 781777 | 782313 | Seq. ID No. 2986 |
| 1454 | Seq. ID No. 2987 | 782603 | 782594 | 782319 | Seq. ID No. 2988 |
| 1455a | Seq. ID No. 2989 | 782323 | 782416 | 782772 | Seq. ID No. 2990 |
| 1455b | Seq. ID No. 2991 | 782323 | 782359 | 782772 | Seq. ID No. 2992 |
| 1456 | Seq. ID No. 2993 | 783394 | 783373 | 782858 | Seq. ID No. 2994 |
| 1457a | Seq. ID No. 2995 | 785272 | 784672 | 783587 | Seq. ID No. 2996 |
| 1457b | Seq. ID No. 2997 | 785272 | 784795 | 783587 | Seq. ID No. 2998 |
| 1457c | Seq. ID No. 2999 | 785272 | 785272 | 783587 | Seq. ID No. 3000 |
| 1459 | Seq. ID No. 3001 | 785453 | 785486 | 785917 | Seq. ID No. 3002 |
| 1462a | Seq. ID No. 3003 | 785979 | 786078 | 787760 | Seq. ID No. 3004 |
| 1462b | Seq. ID No. 3005 | 785979 | 785994 | 787760 | Seq. ID No. 3006 |
| 1463a | Seq. ID No. 3007 | 787735 | 787813 | 788136 | Seq. ID No. 3008 |
| 1463b | Seq. ID No. 3009 | 787735 | 787753 | 788136 | Seq. ID No. 3010 |
| 1463c | Seq. ID No. 3011 | 787735 | 787747 | 788136 | Seq. ID No. 3012 |
| 1466a | Seq. ID No. 3013 | 788108 | 788501 | 789526 | Seq. ID No. 3014 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 1466b | Seq. ID No. 3015 | 788108 | 788249 | 789526 | Seq. ID No. 3016 |
| 1466c | Seq. ID No. 3017 | 788108 | 788147 | 789526 | Seq. ID No. 3018 |
| 1466d | Seq. ID No. 3019 | 788108 | 788120 | 789526 | Seq. ID No. 3020 |
| 1467 | Seq. ID No. 3021 | 790286 | 790256 | 789855 | Seq. ID No. 3022 |
| 1469a | Seq. ID No. 3023 | 789757 | 790642 | 791115 | Seq. ID No. 3024 |
| 1469b | Seq. ID No. 3025 | 789757 | 790531 | 791115 | Seq. ID No. 3026 |
| 1469c | Seq. ID No. 3027 | 789757 | 789769 | 791115 | Seq. ID No. 3028 |
| 1470a | Seq. ID No. 3029 | 792128 | 791798 | 791205 | Seq. ID No. 3030 |
| 1470b | Seq. ID No. 3031 | 792128 | 792008 | 791205 | Seq. ID No. 3032 |
| 1470c | Seq. ID No. 3033 | 792128 | 792116 | 791205 | Seq. ID No. 3034 |
| 1471 | Seq. ID No. 3035 | 792254 | 792257 | 793039 | Seq. ID No. 3036 |
| 1472b | Seq. ID No. 3037 | 793681 | 793612 | 793046 | Seq. ID No. 3038 |
| 1472c | Seq. ID No. 3039 | 793681 | 793666 | 793046 | Seq. ID No. 3040 |
| 1474 | Seq. ID No. 3041 | 793841 | 793841 | 794050 | Seq. ID No. 3042 |
| 1475 | Seq. ID No. 3043 | 794342 | 794369 | 795070 | Seq. ID No. 3044 |
| 1476 | Seq. ID No. 3045 | 795230 | 795236 | 795805 | Seq. ID No. 3046 |
| 1477a | Seq. ID No. 3047 | 796616 | 796430 | 795831 | Seq. ID No. 3048 |
| 1477b | Seq. ID No. 3049 | 796616 | 796589 | 795831 | Seq. ID No. 3050 |
| 1479a | Seq. ID No. 3051 | 796810 | 797002 | 798135 | Seq. ID No. 3052 |
| 1479b | Seq. ID No. 3053 | 796810 | 796867 | 798135 | Seq. ID No. 3054 |
| 1479c | Seq. ID No. 3055 | 796810 | 796813 | 798135 | Seq. ID No. 3056 |
| 1482a | Seq. ID No. 3057 | 798771 | 798831 | 799577 | Seq. ID No. 3058 |
| 1482b | Seq. ID No. 3059 | 798771 | 798774 | 799577 | Seq. ID No. 3060 |
| 1483 | Seq. ID No. 3061 | 799724 | 799736 | 800257 | Seq. ID No. 3062 |
| 1484a | Seq. ID No. 3063 | 800458 | 801334 | 801843 | Seq. ID No. 3064 |
| 1484b | Seq. ID No. 3065 | 800458 | 800473 | 801843 | Seq. ID No. 3066 |
| 1484c | Seq. ID No. 3067 | 800458 | 800458 | 801843 | Seq. ID No. 3068 |
| 1486 | Seq. ID No. 3069 | 801844 | 801853 | 802452 | Seq. ID No. 3070 |
| 1487 | Seq. ID No. 3071 | 802771 | 802768 | 802532 | Seq. ID No. 3072 |

TABLE 2: ALL CLAIMED ORFS

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 1488a | Seq. ID No. 3073 | 802224 | 802977 | 803219 | Seq. ID No. 3074 |
| 1488b | Seq. ID No. 3075 | 802224 | 802917 | 803219 | Seq. ID No. 3076 |
| 1488c | Seq. ID No. 3077 | 802224 | 802788 | 803219 | Seq. ID No. 3078 |
| 1488d | Seq. ID No. 3079 | 802224 | 802464 | 803219 | Seq. ID No. 3080 |
| 1488e | Seq. ID No. 3081 | 802224 | 802431 | 803219 | Seq. ID No. 3082 |
| 1488f | Seq. ID No. 3083 | 802224 | 802377 | 803219 | Seq. ID No. 3084 |
| 1488g | Seq. ID No. 3085 | 802224 | 802323 | 803219 | Seq. ID No. 3086 |
| 1489 | Seq. ID No. 3087 | 803568 | 803550 | 803326 | Seq. ID No. 3088 |
| 1490 | Seq. ID No. 3089 | 803135 | 803330 | 803674 | Seq. ID No. 3090 |
| 1494 | Seq. ID No. 3091 | 803890 | 803929 | 805041 | Seq. ID No. 3092 |
| 1497 | Seq. ID No. 3093 | 805042 | 805048 | 806508 | Seq. ID No. 3094 |
| 1498a | Seq. ID No. 3095 | 806363 | 806543 | 807457 | Seq. ID No. 3096 |
| 1498b | Seq. ID No. 3097 | 806363 | 806423 | 807457 | Seq. ID No. 3098 |
| 1498c | Seq. ID No. 3099 | 806363 | 806396 | 807457 | Seq. ID No. 3100 |
| 1498d | Seq. ID No. 3101 | 806363 | 806393 | 807457 | Seq. ID No. 3102 |
| 1499 | Seq. ID No. 3103 | 809397 | 809382 | 808153 | Seq. ID No. 3104 |
| 1502a | Seq. ID No. 3105 | 809502 | 809565 | 809828 | Seq. ID No. 3106 |
| 1502b | Seq. ID No. 3107 | 809502 | 809502 | 809828 | Seq. ID No. 3108 |
| 1503a | Seq. ID No. 3109 | 809829 | 809847 | 810431 | Seq. ID No. 3110 |
| 1503b | Seq. ID No. 3111 | 809829 | 809835 | 810431 | Seq. ID No. 3112 |
| 1506a | Seq. ID No. 3113 | 810510 | 810666 | 812906 | Seq. ID No. 3114 |
| 1506b | Seq. ID No. 3115 | 810510 | 810621 | 812906 | Seq. ID No. 3116 |
| 1506c | Seq. ID No. 3117 | 810510 | 810525 | 812906 | Seq. ID No. 3118 |
| 1507a | Seq. ID No. 3119 | 813291 | 813231 | 812944 | Seq. ID No. 3120 |
| 1507b | Seq. ID No. 3121 | 813291 | 813246 | 812944 | Seq. ID No. 3122 |
| 1507c | Seq. ID No. 3123 | 813291 | 813282 | 812944 | Seq. ID No. 3124 |
| 1508 | Seq. ID No. 3125 | 812996 | 813032 | 813340 | Seq. ID No. 3126 |
| 1510a | Seq. ID No. 3127 | 813521 | 813737 | 815023 | Seq. ID No. 3128 |
| 1510b | Seq. ID No. 3129 | 813521 | 813704 | 815023 | Seq. ID No. 3130 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 1510c | Seq. ID No. 3131 | 813521 | 813545 | 815023 | Seq. ID No. 3132 |
| 1510d | Seq. ID No. 3133 | 813521 | 813524 | 815023 | Seq. ID No. 3134 |
| 1511 | Seq. ID No. 3135 | 815078 | 815084 | 815920 | Seq. ID No. 3136 |
| 1512 | Seq. ID No. 3137 | 815892 | 815910 | 816524 | Seq. ID No. 3138 |
| 1513a | Seq. ID No. 3139 | 816525 | 816570 | 817034 | Seq. ID No. 3140 |
| 1513b | Seq. ID No. 3141 | 816525 | 816525 | 817034 | Seq. ID No. 3142 |
| 1516 | Seq. ID No. 3143 | 817055 | 817070 | 817537 | Seq. ID No. 3144 |
| 1517a | Seq. ID No. 3145 | 818704 | 818314 | 817709 | Seq. ID No. 3146 |
| 1517b | Seq. ID No. 3147 | 818704 | 818608 | 817709 | Seq. ID No. 3148 |
| 1517c | Seq. ID No. 3149 | 818704 | 818614 | 817709 | Seq. ID No. 3150 |
| 1518a | Seq. ID No. 3151 | 818067 | 818139 | 818636 | Seq. ID No. 3152 |
| 1518b | Seq. ID No. 3153 | 818067 | 818085 | 818636 | Seq. ID No. 3154 |
| 1520 | Seq. ID No. 3155 | 818738 | 818753 | 819112 | Seq. ID No. 3156 |
| 1522 | Seq. ID No. 3157 | 819117 | 819150 | 819596 | Seq. ID No. 3158 |
| 1523 | Seq. ID No. 3159 | 820780 | 820756 | 819647 | Seq. ID No. 3160 |
| 1528 | Seq. ID No. 3161 | 820968 | 820968 | 821969 | Seq. ID No. 3162 |
| 1530a | Seq. ID No. 3163 | 824730 | 824625 | 822091 | Seq. ID No. 3164 |
| 1530b | Seq. ID No. 3165 | 824730 | 824706 | 822091 | Seq. ID No. 3166 |
| 1533a | Seq. ID No. 3167 | 825870 | 825864 | 825565 | Seq. ID No. 3168 |
| 1534a | Seq. ID No. 3169 | 824975 | 825119 | 826375 | Seq. ID No. 3170 |
| 1534b | Seq. ID No. 3171 | 824975 | 824981 | 826375 | Seq. ID No. 3172 |
| 1535a | Seq. ID No. 3173 | 826056 | 826164 | 826391 | Seq. ID No. 3174 |
| 1536a | Seq. ID No. 3175 | 826336 | 826537 | 826698 | Seq. ID No. 3176 |
| 1536b | Seq. ID No. 3177 | 826336 | 826345 | 826698 | Seq. ID No. 3178 |
| 1537 | Seq. ID No. 3179 | 827893 | 827875 | 826907 | Seq. ID No. 3180 |
| 1542 | Seq. ID No. 3181 | 829139 | 829166 | 829660 | Seq. ID No. 3182 |
| 1543 | Seq. ID No. 3183 | 828142 | 828145 | 829974 | Seq. ID No. 3184 |
| 1544 | Seq. ID No. 3185 | 832325 | 832298 | 830493 | Seq. ID No. 3186 |
| 1547a | Seq. ID No. 3187 | 832494 | 832638 | 833225 | Seq. ID No. 3188 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 1547b | Seq. ID No. 3189 | 832494 | 832497 | 833225 | Seq. ID No. 3190 |
| 1548 | Seq. ID No. 3191 | 834559 | 834523 | 833408 | Seq. ID No. 3192 |
| 1552 | Seq. ID No. 3193 | 836319 | 836316 | 836029 | Seq. ID No. 3194 |
| 1553a | Seq. ID No. 3195 | 835285 | 835321 | 836385 | Seq. ID No. 3196 |
| 1553b | Seq. ID No. 3197 | 835285 | 835303 | 836385 | Seq. ID No. 3198 |
| 1554a | Seq. ID No. 3199 | 836324 | 837011 | 837400 | Seq. ID No. 3200 |
| 1554b | Seq. ID No. 3201 | 836324 | 836807 | 837400 | Seq. ID No. 3202 |
| 1554c | Seq. ID No. 3203 | 836324 | 836333 | 837400 | Seq. ID No. 3204 |
| 1555 | Seq. ID No. 3205 | 837622 | 837649 | 839016 | Seq. ID No. 3206 |
| 1556a | Seq. ID No. 3207 | 839851 | 840013 | 840648 | Seq. ID No. 3208 |
| 1556b | Seq. ID No. 3209 | 839851 | 839893 | 840648 | Seq. ID No. 3210 |
| 1556c | Seq. ID No. 3211 | 839851 | 839860 | 840648 | Seq. ID No. 3212 |
| 1557a | Seq. ID No. 3213 | 840617 | 840911 | 841375 | Seq. ID No. 3214 |
| 1557b | Seq. ID No. 3215 | 840617 | 840770 | 841375 | Seq. ID No. 3216 |
| 1557c | Seq. ID No. 3217 | 840617 | 840632 | 841375 | Seq. ID No. 3218 |
| 1559a | Seq. ID No. 3219 | 841324 | 841705 | 842100 | Seq. ID No. 3220 |
| 1559b | Seq. ID No. 3221 | 841324 | 841372 | 842100 | Seq. ID No. 3222 |
| 1563 | Seq. ID No. 3223 | 843403 | 843385 | 843149 | Seq. ID No. 3224 |
| 1564a | Seq. ID No. 3225 | 842064 | 842112 | 843983 | Seq. ID No. 3226 |
| 1564b | Seq. ID No. 3227 | 842064 | 842106 | 843983 | Seq. ID No. 3228 |
| 1565 | Seq. ID No. 3229 | 845451 | 845418 | 844252 | Seq. ID No. 3230 |
| 1567 | Seq. ID No. 3231 | 845601 | 845766 | 845942 | Seq. ID No. 3232 |
| 1568b | Seq. ID No. 3233 | 845896 | 845899 | 846222 | Seq. ID No. 3234 |
| 1569 | Seq. ID No. 3235 | 846223 | 846256 | 846519 | Seq. ID No. 3236 |
| 1570 | Seq. ID No. 3237 | 846792 | 846792 | 846953 | Seq. ID No. 3238 |
| 1571 | Seq. ID No. 3239 | 847452 | 847467 | 848087 | Seq. ID No. 3240 |
| 1572a | Seq. ID No. 3241 | 848056 | 849394 | 849630 | Seq. ID No. 3242 |
| 1572b | Seq. ID No. 3243 | 848056 | 848599 | 849630 | Seq. ID No. 3244 |
| 1572c | Seq. ID No. 3245 | 848056 | 848353 | 849630 | Seq. ID No. 3246 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 1572d | Seq. ID No. 3247 | 848056 | 848200 | 849630 | Seq. ID No. 3248 |
| 1572e | Seq. ID No. 3249 | 848056 | 848065 | 849630 | Seq. ID No. 3250 |
| 1573 | Seq. ID No. 3251 | 849498 | 849618 | 850292 | Seq. ID No. 3252 |
| 1576 | Seq. ID No. 3253 | 850427 | 850442 | 851671 | Seq. ID No. 3254 |
| 1577a | Seq. ID No. 3255 | 852156 | 852168 | 852893 | Seq. ID No. 3256 |
| 1577b | Seq. ID No. 3257 | 852156 | 852165 | 852893 | Seq. ID No. 3258 |
| 1578 | Seq. ID No. 3259 | 852839 | 852860 | 853744 | Seq. ID No. 3260 |
| 1580a | Seq. ID No. 3261 | 854091 | 854103 | 854405 | Seq. ID No. 3262 |
| 1580b | Seq. ID No. 3263 | 854091 | 854091 | 854405 | Seq. ID No. 3264 |
| 1581 | Seq. ID No. 3265 | 854392 | 854407 | 854871 | Seq. ID No. 3266 |
| 1582a | Seq. ID No. 3267 | 854822 | 854933 | 855163 | Seq. ID No. 3268 |
| 1582b | Seq. ID No. 3269 | 854822 | 854855 | 855163 | Seq. ID No. 3270 |
| 1582c | Seq. ID No. 3271 | 854822 | 854837 | 855163 | Seq. ID No. 3272 |
| 1584 | Seq. ID No. 3273 | 855136 | 855160 | 855618 | Seq. ID No. 3274 |
| 1585a | Seq. ID No. 3275 | 855593 | 855626 | 856216 | Seq. ID No. 3276 |
| 1585b | Seq. ID No. 3277 | 855593 | 855602 | 856216 | Seq. ID No. 3278 |
| 1587a | Seq. ID No. 3279 | 856349 | 856619 | 857485 | Seq. ID No. 3280 |
| 1587b | Seq. ID No. 3281 | 856349 | 856424 | 857485 | Seq. ID No. 3282 |
| 1587c | Seq. ID No. 3283 | 856349 | 856373 | 857485 | Seq. ID No. 3284 |
| 1588 | Seq. ID No. 3285 | 857486 | 857504 | 858061 | Seq. ID No. 3286 |
| 1590 | Seq. ID No. 3287 | 858037 | 858088 | 858495 | Seq. ID No. 3288 |
| 1591 | Seq. ID No. 3289 | 858485 | 858488 | 858988 | Seq. ID No. 3290 |
| 1592a | Seq. ID No. 3291 | 859040 | 859280 | 860416 | Seq. ID No. 3292 |
| 1592b | Seq. ID No. 3293 | 859040 | 859052 | 860416 | Seq. ID No. 3294 |
| 1593 | Seq. ID No. 3295 | 860376 | 860406 | 860675 | Seq. ID No. 3296 |
| 1594a | Seq. ID No. 3297 | 860676 | 860784 | 861578 | Seq. ID No. 3298 |
| 1594b | Seq. ID No. 3299 | 860676 | 860685 | 861578 | Seq. ID No. 3300 |
| 1595a | Seq. ID No. 3301 | 861559 | 861571 | 862377 | Seq. ID No. 3302 |
| 1595b | Seq. ID No. 3303 | 861559 | 861562 | 862377 | Seq. ID No. 3304 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 1598a | Seq. ID No. 3305 | 862517 | 862631 | 864310 | Seq. ID No. 3306 |
| 1598b | Seq. ID No. 3307 | 862517 | 862601 | 864310 | Seq. ID No. 3308 |
| 1600a | Seq. ID No. 3309 | 864687 | 864807 | 866219 | Seq. ID No. 3310 |
| 1600b | Seq. ID No. 3311 | 864687 | 864798 | 866219 | Seq. ID No. 3312 |
| 1600c | Seq. ID No. 3313 | 864687 | 864702 | 866219 | Seq. ID No. 3314 |
| 1602 | Seq. ID No. 3315 | 866403 | 866418 | 867107 | Seq. ID No. 3316 |
| 1606a | Seq. ID No. 3317 | 867044 | 867632 | 868624 | Seq. ID No. 3318 |
| 1606b | Seq. ID No. 3319 | 867044 | 867104 | 868624 | Seq. ID No. 3320 |
| 1607a | Seq. ID No. 3321 | 869654 | 869564 | 868668 | Seq. ID No. 3322 |
| 1607b | Seq. ID No. 3323 | 869654 | 869636 | 868668 | Seq. ID No. 3324 |
| 1608 | Seq. ID No. 3325 | 868639 | 868657 | 868893 | Seq. ID No. 3326 |
| 1610a | Seq. ID No. 3327 | 870103 | 870085 | 869714 | Seq. ID No. 3328 |
| 1610b | Seq. ID No. 3329 | 870103 | 870094 | 869714 | Seq. ID No. 3330 |
| 1612 | Seq. ID No. 3331 | 871769 | 871679 | 871356 | Seq. ID No. 3332 |
| 1616a | Seq. ID No. 3333 | 870406 | 870709 | 872826 | Seq. ID No. 3334 |
| 1616b | Seq. ID No. 3335 | 870406 | 870418 | 872826 | Seq. ID No. 3336 |
| 1619 | Seq. ID No. 3337 | 873157 | 873166 | 874266 | Seq. ID No. 3338 |
| 1621 | Seq. ID No. 3339 | 875446 | 875428 | 875066 | Seq. ID No. 3340 |
| 1622a | Seq. ID No. 3341 | 875866 | 875788 | 875537 | Seq. ID No. 3342 |
| 1623a | Seq. ID No. 3343 | 874398 | 874665 | 875993 | Seq. ID No. 3344 |
| 1623b | Seq. ID No. 3345 | 874398 | 874437 | 875993 | Seq. ID No. 3346 |
| 1623c | Seq. ID No. 3347 | 874398 | 874410 | 875993 | Seq. ID No. 3348 |
| 1624 | Seq. ID No. 3349 | 876797 | 876749 | 876447 | Seq. ID No. 3350 |
| 1625a | Seq. ID No. 3351 | 875908 | 876511 | 877038 | Seq. ID No. 3352 |
| 1625b | Seq. ID No. 3353 | 875908 | 875974 | 877038 | Seq. ID No. 3354 |
| 1625c | Seq. ID No. 3355 | 875908 | 875935 | 877038 | Seq. ID No. 3356 |
| 1626a | Seq. ID No. 3357 | 876984 | 877617 | 877994 | Seq. ID No. 3358 |
| 1626b | Seq. ID No. 3359 | 876984 | 877038 | 877994 | Seq. ID No. 3360 |
| 1628a | Seq. ID No. 3361 | 878218 | 878263 | 879225 | Seq. ID No. 3362 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 1628b | Seq. ID No. 3363 | 878218 | 878233 | 879225 | Seq. ID No. 3364 |
| 1632a | Seq. ID No. 3365 | 880585 | 880471 | 879908 | Seq. ID No. 3366 |
| 1632b | Seq. ID No. 3367 | 880585 | 880525 | 879908 | Seq. ID No. 3368 |
| 1633a | Seq. ID No. 3369 | 882546 | 882498 | 882007 | Seq. ID No. 3370 |
| 1633b | Seq. ID No. 3371 | 882546 | 882543 | 882007 | Seq. ID No. 3372 |
| 1634a | Seq. ID No. 3373 | 880656 | 880746 | 882020 | Seq. ID No. 3374 |
| 1634b | Seq. ID No. 3375 | 880656 | 880707 | 882020 | Seq. ID No. 3376 |
| 1634c | Seq. ID No. 3377 | 880656 | 880659 | 882020 | Seq. ID No. 3378 |
| 1639b | Seq. ID No. 3379 | 881983 | 881992 | 883659 | Seq. ID No. 3380 |
| 1642a | Seq. ID No. 3381 | 883922 | 883976 | 886069 | Seq. ID No. 3382 |
| 1642b | Seq. ID No. 3383 | 883922 | 883934 | 886069 | Seq. ID No. 3384 |
| 1643a | Seq. ID No. 3385 | 886023 | 886074 | 886400 | Seq. ID No. 3386 |
| 1643b | Seq. ID No. 3387 | 886023 | 886035 | 886400 | Seq. ID No. 3388 |
| 1646a | Seq. ID No. 3389 | 886658 | 888038 | 888331 | Seq. ID No. 3390 |
| 1646b | Seq. ID No. 3391 | 886658 | 887708 | 888331 | Seq. ID No. 3392 |
| 1646c | Seq. ID No. 3393 | 886658 | 886886 | 888331 | Seq. ID No. 3394 |
| 1646d | Seq. ID No. 3395 | 886658 | 886745 | 888331 | Seq. ID No. 3396 |
| 1646e | Seq. ID No. 3397 | 886658 | 886664 | 888331 | Seq. ID No. 3398 |
| 1646f | Seq. ID No. 3399 | 886658 | 886658 | 888331 | Seq. ID No. 3400 |
| 1647 | Seq. ID No. 3401 | 888398 | 888425 | 889144 | Seq. ID No. 3402 |
| 1648b | Seq. ID No. 3403 | 890392 | 890371 | 890099 | Seq. ID No. 3404 |
| 1649a | Seq. ID No. 3405 | 891564 | 891375 | 890626 | Seq. ID No. 3406 |
| 1649b | Seq. ID No. 3407 | 891564 | 891537 | 890626 | Seq. ID No. 3408 |
| 1649c | Seq. ID No. 3409 | 891564 | 891555 | 890626 | Seq. ID No. 3410 |
| 1652a | Seq. ID No. 3411 | 891565 | 891646 | 893049 | Seq. ID No. 3412 |
| 1652b | Seq. ID No. 3413 | 891565 | 891580 | 893049 | Seq. ID No. 3414 |
| 1654 | Seq. ID No. 3415 | 893169 | 893250 | 894092 | Seq. ID No. 3416 |
| 1656b | Seq. ID No. 3417 | 894132 | 894327 | 894650 | Seq. ID No. 3418 |
| 1657 | Seq. ID No. 3419 | 895472 | 895439 | 895203 | Seq. ID No. 3420 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 1659a | Seq. ID No. 3421 | 894949 | 896161 | 896691 | Seq. ID No. 3422 |
| 1659b | Seq. ID No. 3423 | 894949 | 895030 | 896691 | Seq. ID No. 3424 |
| 1659c | Seq. ID No. 3425 | 894949 | 894982 | 896691 | Seq. ID No. 3426 |
| 1660b | Seq. ID No. 3427 | 896222 | 896285 | 896725 | Seq. ID No. 3428 |
| 1662a | Seq. ID No. 3429 | 896963 | 896975 | 897847 | Seq. ID No. 3430 |
| 1662b | Seq. ID No. 3431 | 896963 | 896963 | 897847 | Seq. ID No. 3432 |
| 1663 | Seq. ID No. 3433 | 898657 | 898648 | 898361 | Seq. ID No. 3434 |
| 1664 | Seq. ID No. 3435 | 897988 | 898021 | 898602 | Seq. ID No. 3436 |
| 1665a | Seq. ID No. 3437 | 898458 | 898578 | 898913 | Seq. ID No. 3438 |
| 1668 | Seq. ID No. 3439 | 899037 | 899052 | 899945 | Seq. ID No. 3440 |
| 1669 | Seq. ID No. 3441 | 900663 | 900630 | 900307 | Seq. ID No. 3442 |
| 1670a | Seq. ID No. 3443 | 900059 | 900101 | 900757 | Seq. ID No. 3444 |
| 1670b | Seq. ID No. 3445 | 900059 | 900089 | 900757 | Seq. ID No. 3446 |
| 1670c | Seq. ID No. 3447 | 900059 | 900068 | 900757 | Seq. ID No. 3448 |
| 1673a | Seq. ID No. 3449 | 900778 | 902047 | 902286 | Seq. ID No. 3450 |
| 1673b | Seq. ID No. 3451 | 900778 | 901402 | 902286 | Seq. ID No. 3452 |
| 1673c | Seq. ID No. 3453 | 900778 | 901204 | 902286 | Seq. ID No. 3454 |
| 1673d | Seq. ID No. 3455 | 900778 | 901018 | 902286 | Seq. ID No. 3456 |
| 1673e | Seq. ID No. 3457 | 900778 | 900898 | 902286 | Seq. ID No. 3458 |
| 1673f | Seq. ID No. 3459 | 900778 | 900814 | 902286 | Seq. ID No. 3460 |
| 1674 | Seq. ID No. 3461 | 902433 | 902532 | 903383 | Seq. ID No. 3462 |
| 1675a | Seq. ID No. 3463 | 904184 | 904340 | 905383 | Seq. ID No. 3464 |
| 1675b | Seq. ID No. 3465 | 904184 | 904208 | 905383 | Seq. ID No. 3466 |
| 1675c | Seq. ID No. 3467 | 904184 | 904184 | 905383 | Seq. ID No. 3468 |
| 1676 | Seq. ID No. 3469 | 905424 | 905451 | 905852 | Seq. ID No. 3470 |
| 1677 | Seq. ID No. 3471 | 907317 | 907284 | 906022 | Seq. ID No. 3472 |
| 1679 | Seq. ID No. 3473 | 907448 | 907472 | 908014 | Seq. ID No. 3474 |
| 1680 | Seq. ID No. 3475 | 908628 | 908625 | 908176 | Seq. ID No. 3476 |
| 1682a | Seq. ID No. 3477 | 908785 | 908872 | 909591 | Seq. ID No. 3478 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 1682b | Seq. ID No. 3479 | 908785 | 908803 | 909591 | Seq. ID No. 3480 |
| 1683a | Seq. ID No. 3481 | 909633 | 910008 | 910523 | Seq. ID No. 3482 |
| 1683b | Seq. ID No. 3483 | 909633 | 909669 | 910523 | Seq. ID No. 3484 |
| 1684 | Seq. ID No. 3485 | 911359 | 911347 | 910640 | Seq. ID No. 3486 |
| 1685 | Seq. ID No. 3487 | 912399 | 912375 | 911350 | Seq. ID No. 3488 |
| 1687 | Seq. ID No. 3489 | 912556 | 912568 | 912813 | Seq. ID No. 3490 |
| 1688a | Seq. ID No. 3491 | 912536 | 913217 | 913645 | Seq. ID No. 3492 |
| 1688b | Seq. ID No. 3493 | 912536 | 912641 | 913645 | Seq. ID No. 3494 |
| 1688c | Seq. ID No. 3495 | 912536 | 912539 | 913645 | Seq. ID No. 3496 |
| 1689a | Seq. ID No. 3497 | 913587 | 913638 | 914393 | Seq. ID No. 3498 |
| 1689b | Seq. ID No. 3499 | 913587 | 913602 | 914393 | Seq. ID No. 3500 |
| 1689c | Seq. ID No. 3501 | 913587 | 913596 | 914393 | Seq. ID No. 3502 |
| 1690a | Seq. ID No. 3503 | 914420 | 914993 | 915481 | Seq. ID No. 3504 |
| 1690b | Seq. ID No. 3505 | 914420 | 914423 | 915481 | Seq. ID No. 3506 |
| 1691 | Seq. ID No. 3507 | 915482 | 915497 | 916570 | Seq. ID No. 3508 |
| 1692 | Seq. ID No. 3509 | 916577 | 916586 | 917389 | Seq. ID No. 3510 |
| 1693 | Seq. ID No. 3511 | 917802 | 917814 | 919235 | Seq. ID No. 3512 |
| 1694a | Seq. ID No. 3513 | 919415 | 919634 | 920410 | Seq. ID No. 3514 |
| 1694b | Seq. ID No. 3515 | 919415 | 919559 | 920410 | Seq. ID No. 3516 |
| 1694c | Seq. ID No. 3517 | 919415 | 919424 | 920410 | Seq. ID No. 3518 |
| 1694d | Seq. ID No. 3519 | 919415 | 919415 | 920410 | Seq. ID No. 3520 |
| 1696 | Seq. ID No. 3521 | 920424 | 920427 | 921608 | Seq. ID No. 3522 |
| 1697a | Seq. ID No. 3523 | 921701 | 921848 | 922666 | Seq. ID No. 3524 |
| 1697b | Seq. ID No. 3525 | 921701 | 921710 | 922666 | Seq. ID No. 3526 |
| 1699a | Seq. ID No. 3527 | 922706 | 923171 | 924190 | Seq. ID No. 3528 |
| 1699b | Seq. ID No. 3529 | 922706 | 922706 | 924190 | Seq. ID No. 3530 |
| 1700a | Seq. ID No. 3531 | 924300 | 924342 | 924713 | Seq. ID No. 3532 |
| 1700b | Seq. ID No. 3533 | 924300 | 924303 | 924713 | Seq. ID No. 3534 |
| 1701a | Seq. ID No. 3535 | 925996 | 925984 | 924812 | Seq. ID No. 3536 |

TABLE 2: ALL CLAIMED ORFS

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 1701b | Seq. ID No. 3537 | 925996 | 925987 | 924812 | Seq. ID No. 3538 |
| 1703b | Seq. ID No. 3539 | 924930 | 924948 | 925280 | Seq. ID No. 3540 |
| 1704a | Seq. ID No. 3541 | 926230 | 926311 | 926853 | Seq. ID No. 3542 |
| 1704b | Seq. ID No. 3543 | 926230 | 926239 | 926853 | Seq. ID No. 3544 |
| 1705a | Seq. ID No. 3545 | 927259 | 927289 | 927513 | Seq. ID No. 3546 |
| 1705b | Seq. ID No. 3547 | 927259 | 927283 | 927513 | Seq. ID No. 3548 |
| 1706 | Seq. ID No. 3549 | 926847 | 926850 | 927800 | Seq. ID No. 3550 |
| 1707a | Seq. ID No. 3551 | 928874 | 928865 | 928023 | Seq. ID No. 3552 |
| 1707b | Seq. ID No. 3553 | 928874 | 928868 | 928023 | Seq. ID No. 3554 |
| 1708 | Seq. ID No. 3555 | 928398 | 928443 | 928799 | Seq. ID No. 3556 |
| 1709 | Seq. ID No. 3557 | 929780 | 929798 | 930049 | Seq. ID No. 3558 |
| 1710a | Seq. ID No. 3559 | 929083 | 929158 | 930066 | Seq. ID No. 3560 |
| 1710b | Seq. ID No. 3561 | 929083 | 929098 | 930066 | Seq. ID No. 3562 |
| 1712a | Seq. ID No. 3563 | 930274 | 930283 | 931269 | Seq. ID No. 3564 |
| 1712b | Seq. ID No. 3565 | 930274 | 930277 | 931269 | Seq. ID No. 3566 |
| 1715a | Seq. ID No. 3567 | 931778 | 931790 | 932497 | Seq. ID No. 3568 |
| 1715b | Seq. ID No. 3569 | 931778 | 931787 | 932497 | Seq. ID No. 3570 |
| 1718a | Seq. ID No. 3571 | 932926 | 932998 | 933222 | Seq. ID No. 3572 |
| 1718b | Seq. ID No. 3573 | 932926 | 932956 | 933222 | Seq. ID No. 3574 |
| 1722 | Seq. ID No. 3575 | 932562 | 932577 | 936251 | Seq. ID No. 3576 |
| 1723a | Seq. ID No. 3577 | 936220 | 936388 | 937206 | Seq. ID No. 3578 |
| 1723b | Seq. ID No. 3579 | 936220 | 936226 | 937206 | Seq. ID No. 3580 |
| 1724 | Seq. ID No. 3581 | 937832 | 937808 | 937542 | Seq. ID No. 3582 |
| 1727 | Seq. ID No. 3583 | 937230 | 937248 | 938735 | Seq. ID No. 3584 |
| 1728 | Seq. ID No. 3585 | 938736 | 938766 | 939101 | Seq. ID No. 3586 |
| 1731 | Seq. ID No. 3587 | 940559 | 940523 | 940092 | Seq. ID No. 3588 |
| 1733 | Seq. ID No. 3589 | 939109 | 939109 | 940608 | Seq. ID No. 3590 |
| 1734 | Seq. ID No. 3591 | 940535 | 940625 | 940846 | Seq. ID No. 3592 |
| 1735a | Seq. ID No. 3593 | 941618 | 941300 | 940989 | Seq. ID No. 3594 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 1735b | Seq. ID No. 3595 | 941618 | 941555 | 940989 | Seq. ID No. 3596 |
| 1737a | Seq. ID No. 3597 | 941044 | 941542 | 945477 | Seq. ID No. 3598 |
| 1737b | Seq. ID No. 3599 | 941044 | 941326 | 945477 | Seq. ID No. 3600 |
| 1738a | Seq. ID No. 3601 | 945878 | 946205 | 946741 | Seq. ID No. 3602 |
| 1738b | Seq. ID No. 3603 | 945878 | 945977 | 946741 | Seq. ID No. 3604 |
| 1738c | Seq. ID No. 3605 | 945878 | 945908 | 946741 | Seq. ID No. 3606 |
| 1739 | Seq. ID No. 3607 | 946742 | 946859 | 947188 | Seq. ID No. 3608 |
| 1741 | Seq. ID No. 3609 | 947264 | 947297 | 948463 | Seq. ID No. 3610 |
| 1743 | Seq. ID No. 3611 | 949075 | 949111 | 950652 | Seq. ID No. 3612 |
| 1744a | Seq. ID No. 3613 | 950653 | 951049 | 951951 | Seq. ID No. 3614 |
| 1744b | Seq. ID No. 3615 | 950653 | 950716 | 951951 | Seq. ID No. 3616 |
| 1745 | Seq. ID No. 3617 | 952788 | 952791 | 953084 | Seq. ID No. 3618 |
| 1747 | Seq. ID No. 3619 | 952652 | 952664 | 954949 | Seq. ID No. 3620 |
| 1749a | Seq. ID No. 3621 | 957393 | 957060 | 956695 | Seq. ID No. 3622 |
| 1749b | Seq. ID No. 3623 | 957393 | 957297 | 956695 | Seq. ID No. 3624 |
| 1750a | Seq. ID No. 3625 | 957380 | 957347 | 957060 | Seq. ID No. 3626 |
| 1752a | Seq. ID No. 3627 | 955633 | 956623 | 957144 | Seq. ID No. 3628 |
| 1752b | Seq. ID No. 3629 | 955633 | 955708 | 957144 | Seq. ID No. 3630 |
| 1753 | Seq. ID No. 3631 | 957145 | 957193 | 957429 | Seq. ID No. 3632 |
| 1756a | Seq. ID No. 3633 | 957791 | 957923 | 958780 | Seq. ID No. 3634 |
| 1756b | Seq. ID No. 3635 | 957791 | 957803 | 958780 | Seq. ID No. 3636 |
| 1757a | Seq. ID No. 3637 | 959675 | 959477 | 958860 | Seq. ID No. 3638 |
| 1757b | Seq. ID No. 3639 | 959675 | 959555 | 958860 | Seq. ID No. 3640 |
| 1759 | Seq. ID No. 3641 | 959662 | 959665 | 959976 | Seq. ID No. 3642 |
| 1760 | Seq. ID No. 3643 | 959998 | 960001 | 960330 | Seq. ID No. 3644 |
| 1762 | Seq. ID No. 3645 | 960400 | 960412 | 960936 | Seq. ID No. 3646 |
| 1764a | Seq. ID No. 3647 | 960937 | 960970 | 961668 | Seq. ID No. 3648 |
| 1764b | Seq. ID No. 3649 | 960937 | 960952 | 961668 | Seq. ID No. 3650 |
| 1764c | Seq. ID No. 3651 | 960937 | 960937 | 961668 | Seq. ID No. 3652 |

TABLE 2: ALL CLAIMED ORFS

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 1765 | Seq. ID No. 3653 | 962620 | 962575 | 961790 | Seq. ID No. 3654 |
| 1766 | Seq. ID No. 3655 | 962761 | 962761 | 962645 | Seq. ID No. 3656 |
| 1767a | Seq. ID No. 3657 | 963674 | 963638 | 962793 | Seq. ID No. 3658 |
| 1767b | Seq. ID No. 3659 | 963674 | 963671 | 962793 | Seq. ID No. 3660 |
| 1769a | Seq. ID No. 3661 | 963809 | 964073 | 964522 | Seq. ID No. 3662 |
| 1769b | Seq. ID No. 3663 | 963809 | 963842 | 964522 | Seq. ID No. 3664 |
| 1771 | Seq. ID No. 3665 | 964635 | 964641 | 965921 | Seq. ID No. 3666 |
| 1773 | Seq. ID No. 3667 | 965922 | 965931 | 966497 | Seq. ID No. 3668 |
| 1774 | Seq. ID No. 3669 | 966556 | 966556 | 966882 | Seq. ID No. 3670 |
| 1775a | Seq. ID No. 3671 | 966897 | 967200 | 968219 | Seq. ID No. 3672 |
| 1775b | Seq. ID No. 3673 | 966897 | 967089 | 968219 | Seq. ID No. 3674 |
| 1775c | Seq. ID No. 3675 | 966897 | 966909 | 968219 | Seq. ID No. 3676 |
| 1778a | Seq. ID No. 3677 | 970818 | 970803 | 970543 | Seq. ID No. 3678 |
| 1778b | Seq. ID No. 3679 | 970818 | 970812 | 970543 | Seq. ID No. 3680 |
| 1780 | Seq. ID No. 3681 | 968216 | 968234 | 971017 | Seq. ID No. 3682 |
| 1783a | Seq. ID No. 3683 | 972121 | 972085 | 971618 | Seq. ID No. 3684 |
| 1783b | Seq. ID No. 3685 | 972121 | 972103 | 971618 | Seq. ID No. 3686 |
| 1784a | Seq. ID No. 3687 | 971018 | 971165 | 971623 | Seq. ID No. 3688 |
| 1784b | Seq. ID No. 3689 | 971018 | 971144 | 971623 | Seq. ID No. 3690 |
| 1788a | Seq. ID No. 3691 | 971657 | 972002 | 972955 | Seq. ID No. 3692 |
| 1788b | Seq. ID No. 3693 | 971657 | 971762 | 972955 | Seq. ID No. 3694 |
| 1788c | Seq. ID No. 3695 | 971657 | 971660 | 972955 | Seq. ID No. 3696 |
| 1789a | Seq. ID No. 3697 | 973047 | 973068 | 973802 | Seq. ID No. 3698 |
| 1789b | Seq. ID No. 3699 | 973047 | 973065 | 973802 | Seq. ID No. 3700 |
| 1790a | Seq. ID No. 3701 | 974447 | 974363 | 974136 | Seq. ID No. 3702 |
| 1790b | Seq. ID No. 3703 | 974447 | 974393 | 974136 | Seq. ID No. 3704 |
| 1792a | Seq. ID No. 3705 | 973813 | 973930 | 974529 | Seq. ID No. 3706 |
| 1792b | Seq. ID No. 3707 | 973813 | 973918 | 974529 | Seq. ID No. 3708 |
| 1792c | Seq. ID No. 3709 | 973813 | 973882 | 974529 | Seq. ID No. 3710 |

TABLE 2: ALL CLAIMED ORFS

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 1793a | Seq. ID No. 3711 | 976354 | 976111 | 974645 | Seq. ID No. 3712 |
| 1793b | Seq. ID No. 3713 | 976354 | 976339 | 974645 | Seq. ID No. 3714 |
| 1793c | Seq. ID No. 3715 | 976354 | 976348 | 974645 | Seq. ID No. 3716 |
| 1794a | Seq. ID No. 3717 | 974942 | 975002 | 975253 | Seq. ID No. 3718 |
| 1797a | Seq. ID No. 3719 | 976552 | 976615 | 977007 | Seq. ID No. 3720 |
| 1797b | Seq. ID No. 3721 | 976552 | 976576 | 977007 | Seq. ID No. 3722 |
| 1798a | Seq. ID No. 3723 | 977119 | 977431 | 977703 | Seq. ID No. 3724 |
| 1798b | Seq. ID No. 3725 | 977119 | 977155 | 977703 | Seq. ID No. 3726 |
| 1798c | Seq. ID No. 3727 | 977119 | 977119 | 977703 | Seq. ID No. 3728 |
| 1800 | Seq. ID No. 3729 | 977713 | 977731 | 978411 | Seq. ID No. 3730 |
| 1802a | Seq. ID No. 3731 | 978665 | 978695 | 979249 | Seq. ID No. 3732 |
| 1802b | Seq. ID No. 3733 | 978665 | 978674 | 979249 | Seq. ID No. 3734 |
| 1803 | Seq. ID No. 3735 | 979246 | 979252 | 979512 | Seq. ID No. 3736 |
| 1804a | Seq. ID No. 3737 | 979506 | 979521 | 979817 | Seq. ID No. 3738 |
| 1804b | Seq. ID No. 3739 | 979506 | 979512 | 979817 | Seq. ID No. 3740 |
| 1805 | Seq. ID No. 3741 | 979818 | 979821 | 980378 | Seq. ID No. 3742 |
| 1806a | Seq. ID No. 3743 | 980320 | 980392 | 981078 | Seq. ID No. 3744 |
| 1806b | Seq. ID No. 3745 | 980320 | 980371 | 981078 | Seq. ID No. 3746 |
| 1806c | Seq. ID No. 3747 | 980320 | 980338 | 981078 | Seq. ID No. 3748 |
| 1807a | Seq. ID No. 3749 | 981100 | 981109 | 981456 | Seq. ID No. 3750 |
| 1807b | Seq. ID No. 3751 | 981100 | 981100 | 981456 | Seq. ID No. 3752 |
| 1808a | Seq. ID No. 3753 | 981441 | 982707 | 983054 | Seq. ID No. 3754 |
| 1808b | Seq. ID No. 3755 | 981441 | 982521 | 983054 | Seq. ID No. 3756 |
| 1808c | Seq. ID No. 3757 | 981441 | 982008 | 983054 | Seq. ID No. 3758 |
| 1808d | Seq. ID No. 3759 | 981441 | 981453 | 983054 | Seq. ID No. 3760 |
| 1809a | Seq. ID No. 3761 | 983069 | 984152 | 984700 | Seq. ID No. 3762 |
| 1809b | Seq. ID No. 3763 | 983069 | 983858 | 984700 | Seq. ID No. 3764 |
| 1809c | Seq. ID No. 3765 | 983069 | 983705 | 984700 | Seq. ID No. 3766 |
| 1809d | Seq. ID No. 3767 | 983069 | 983258 | 984700 | Seq. ID No. 3768 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|-----------------------|------------------------------|------------------|--------------------------|-----------------|----------------------------------|
| 1809e | Seq. ID No. 3769 | 983069 | 983093 | 984700 | Seq. ID No. 3770 |
| 1809f | Seq. ID No. 3771 | 983069 | 983090 | 984700 | Seq. ID No. 3772 |
| 1810a | Seq. ID No. 3773 | 984753 | 984786 | 985220 | Seq. ID No. 3774 |
| 1810b | Seq. ID No. 3775 | 984753 | 984777 | 985220 | Seq. ID No. 3776 |
| 1811a | Seq. ID No. 3777 | 985498 | 985525 | 986454 | Seq. ID No. 3778 |
| 1811b | Seq. ID No. 3779 | 985498 | 985504 | 986454 | Seq. ID No. 3780 |
| 1812a | Seq. ID No. 3781 | 986785 | 986863 | 987144 | Seq. ID No. 3782 |
| 1812b | Seq. ID No. 3783 | 986785 | 986821 | 987144 | Seq. ID No. 3784 |
| 1813 | Seq. ID No. 3785 | 987852 | 987849 | 987478 | Seq. ID No. 3786 |
| 1815a | Seq. ID No. 3787 | 988694 | 988457 | 988041 | Seq. ID No. 3788 |
| 1815b | Seq. ID No. 3789 | 988694 | 988541 | 988041 | Seq. ID No. 3790 |
| 1815c | Seq. ID No. 3791 | 988694 | 988565 | 988041 | Seq. ID No. 3792 |
| 1816a | Seq. ID No. 3793 | 990681 | 990537 | 988399 | Seq. ID No. 3794 |
| 1816b | Seq. ID No. 3795 | 990681 | 990672 | 988399 | Seq. ID No. 3796 |
| 1816c | Seq. ID No. 3797 | 990681 | 990675 | 988399 | Seq. ID No. 3798 |
| 1817a | Seq. ID No. 3799 | 988113 | 988182 | 988472 | Seq. ID No. 3800 |
| 1819a | Seq. ID No. 3801 | 991399 | 991240 | 990737 | Seq. ID No. 3802 |
| 1819b | Seq. ID No. 3803 | 991399 | 991372 | 990737 | Seq. ID No. 3804 |
| 1821 | Seq. ID No. 3805 | 991399 | 991462 | 992019 | Seq. ID No. 3806 |
| 1822 | Seq. ID No. 3807 | 992670 | 992622 | 992392 | Seq. ID No. 3808 |
| 1823a | Seq. ID No. 3809 | 992081 | 992093 | 992791 | Seq. ID No. 3810 |
| 1823b | Seq. ID No. 3811 | 992081 | 992084 | 992791 | Seq. ID No. 3812 |
| 1825 | Seq. ID No. 3813 | 993363 | 993384 | 993830 | Seq. ID No. 3814 |
| 1826a | Seq. ID No. 3815 | 994009 | 994021 | 994287 | Seq. ID No. 3816 |
| 1826b | Seq. ID No. 3817 | 994009 | 994015 | 994287 | Seq. ID No. 3818 |
| 1828 | Seq. ID No. 3819 | 993831 | 993834 | 994970 | Seq. ID No. 3820 |
| 1830a | Seq. ID No. 3821 | 995061 | 995355 | 995987 | Seq. ID No. 3822 |
| 1830b | Seq. ID No. 3823 | 995061 | 995127 | 995987 | Seq. ID No. 3824 |
| 1833 | Seq. ID No. 3825 | 996148 | 996148 | 997719 | Seq. ID No. 3826 |

TABLE 2: ALL CLAIMED ORFS

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 1834 | Seq. ID No. 3827 | 998067 | 998067 | 997864 | Seq. ID No. 3828 |
| 1835 | Seq. ID No. 3829 | 998280 | 998280 | 998462 | Seq. ID No. 3830 |
| 1836a | Seq. ID No. 3831 | 998407 | 998452 | 999252 | Seq. ID No. 3832 |
| 1836b | Seq. ID No. 3833 | 998407 | 998437 | 999252 | Seq. ID No. 3834 |
| 1837 | Seq. ID No. 3835 | 999249 | 999264 | 999962 | Seq. ID No. 3836 |
| 1838a | Seq. ID No. 3837 | 999984 | 1000437 | 1001729 | Seq. ID No. 3838 |
| 1838b | Seq. ID No. 3839 | 999984 | 1000410 | 1001729 | Seq. ID No. 3840 |
| 1838c | Seq. ID No. 3841 | 999984 | 1000026 | 1001729 | Seq. ID No. 3842 |
| 1838d | Seq. ID No. 3843 | 999984 | 999993 | 1001729 | Seq. ID No. 3844 |
| 1839a | Seq. ID No. 3845 | 1001786 | 1001882 | 1002862 | Seq. ID No. 3846 |
| 1839b | Seq. ID No. 3847 | 1001786 | 1001852 | 1002862 | Seq. ID No. 3848 |
| 1842a | Seq. ID No. 3849 | 1003007 | 1004168 | 1004401 | Seq. ID No. 3850 |
| 1842b | Seq. ID No. 3851 | 1003007 | 1003763 | 1004401 | Seq. ID No. 3852 |
| 1842c | Seq. ID No. 3853 | 1003007 | 1003511 | 1004401 | Seq. ID No. 3854 |
| 1842d | Seq. ID No. 3855 | 1003007 | 1003013 | 1004401 | Seq. ID No. 3856 |
| 1843 | Seq. ID No. 3857 | 1004418 | 1004421 | 1005749 | Seq. ID No. 3858 |
| 1845a | Seq. ID No. 3859 | 1008055 | 1007122 | 1006469 | Seq. ID No. 3860 |
| 1845b | Seq. ID No. 3861 | 1008055 | 1007620 | 1006469 | Seq. ID No. 3862 |
| 1845c | Seq. ID No. 3863 | 1008055 | 1008037 | 1006469 | Seq. ID No. 3864 |
| 1848a | Seq. ID No. 3865 | 1009315 | 1009012 | 1008188 | Seq. ID No. 3866 |
| 1848b | Seq. ID No. 3867 | 1009315 | 1009315 | 1008188 | Seq. ID No. 3868 |
| 1850a | Seq. ID No. 3869 | 1009477 | 1009501 | 1010796 | Seq. ID No. 3870 |
| 1850b | Seq. ID No. 3871 | 1009477 | 1009495 | 1010796 | Seq. ID No. 3872 |
| 1850c | Seq. ID No. 3873 | 1009477 | 1009486 | 1010796 | Seq. ID No. 3874 |
| 1853a | Seq. ID No. 3875 | 1010827 | 1010860 | 1011777 | Seq. ID No. 3876 |
| 1853b | Seq. ID No. 3877 | 1010827 | 1010830 | 1011777 | Seq. ID No. 3878 |
| 1854a | Seq. ID No. 3879 | 1011872 | 1011941 | 1012564 | Seq. ID No. 3880 |
| 1854b | Seq. ID No. 3881 | 1011872 | 1011875 | 1012564 | Seq. ID No. 3882 |
| 1855 | Seq. ID No. 3883 | 1012793 | 1012808 | 1013707 | Seq. ID No. 3884 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 1856 | Seq. ID No. 3885 | 1013934 | 1014024 | 1014491 | Seq. ID No. 3886 |
| 1857a | Seq. ID No. 3887 | 1016563 | 1015273 | 1014593 | Seq. ID No. 3888 |
| 1857b | Seq. ID No. 3889 | 1016563 | 1016080 | 1014593 | Seq. ID No. 3890 |
| 1857c | Seq. ID No. 3891 | 1016563 | 1016137 | 1014593 | Seq. ID No. 3892 |
| 1857d | Seq. ID No. 3893 | 1016563 | 1016536 | 1014593 | Seq. ID No. 3894 |
| 1858 | Seq. ID No. 3895 | 1015131 | 1015131 | 1014907 | Seq. ID No. 3896 |
| 1859 | Seq. ID No. 3897 | 1016974 | 1016971 | 1016564 | Seq. ID No. 3898 |
| 1861a | Seq. ID No. 3899 | 1017158 | 1017200 | 1019077 | Seq. ID No. 3900 |
| 1861b | Seq. ID No. 3901 | 1017158 | 1017173 | 1019077 | Seq. ID No. 3902 |
| 1862a | Seq. ID No. 3903 | 1019736 | 1019589 | 1019356 | Seq. ID No. 3904 |
| 1863a | Seq. ID No. 3905 | 1019023 | 1019089 | 1019583 | Seq. ID No. 3906 |
| 1863b | Seq. ID No. 3907 | 1019023 | 1019050 | 1019583 | Seq. ID No. 3908 |
| 1864a | Seq. ID No. 3909 | 1019384 | 1019564 | 1019725 | Seq. ID No. 3910 |
| 1865a | Seq. ID No. 3911 | 1020661 | 1020484 | 1019975 | Seq. ID No. 3912 |
| 1865b | Seq. ID No. 3913 | 1020661 | 1020583 | 1019975 | Seq. ID No. 3914 |
| 1868 | Seq. ID No. 3915 | 1020702 | 1020720 | 1021364 | Seq. ID No. 3916 |
| 1869 | Seq. ID No. 3917 | 1021387 | 1021423 | 1021665 | Seq. ID No. 3918 |
| 1870 | Seq. ID No. 3919 | 1021696 | 1021726 | 1022442 | Seq. ID No. 3920 |
| 1873a | Seq. ID No. 3921 | 1022670 | 1022817 | 1024157 | Seq. ID No. 3922 |
| 1873b | Seq. ID No. 3923 | 1022670 | 1022691 | 1024157 | Seq. ID No. 3924 |
| 1873c | Seq. ID No. 3925 | 1022670 | 1022685 | 1024157 | Seq. ID No. 3926 |
| 1875b | Seq. ID No. 3927 | 1024158 | 1024332 | 1024784 | Seq. ID No. 3928 |
| 1875c | Seq. ID No. 3929 | 1024158 | 1024176 | 1024784 | Seq. ID No. 3930 |
| 1877a | Seq. ID No. 3931 | 1024785 | 1024875 | 1025720 | Seq. ID No. 3932 |
| 1877b | Seq. ID No. 3933 | 1024785 | 1024839 | 1025720 | Seq. ID No. 3934 |
| 1878 | Seq. ID No. 3935 | 1025721 | 1025727 | 1026500 | Seq. ID No. 3936 |
| 1879 | Seq. ID No. 3937 | 1026737 | 1026746 | 1027618 | Seq. ID No. 3938 |
| 1882 | Seq. ID No. 3939 | 1029775 | 1029730 | 1029149 | Seq. ID No. 3940 |
| 1884 | Seq. ID No. 3941 | 1027658 | 1027664 | 1029772 | Seq. ID No. 3942 |

TABLE 2: ALL CLAIMED ORFS

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 1886 | Seq. ID No. 3943 | 1030310 | 1030322 | 1031617 | Seq. ID No. 3944 |
| 1887 | Seq. ID No. 3945 | 1032244 | 1032274 | 1033614 | Seq. ID No. 3946 |
| 1888a | Seq. ID No. 3947 | 1033590 | 1033638 | 1034795 | Seq. ID No. 3948 |
| 1888b | Seq. ID No. 3949 | 1033590 | 1033605 | 1034795 | Seq. ID No. 3950 |
| 1890 | Seq. ID No. 3951 | 1035321 | 1035333 | 1036628 | Seq. ID No. 3952 |
| 1891a | Seq. ID No. 3953 | 1036778 | 1036790 | 1037686 | Seq. ID No. 3954 |
| 1891b | Seq. ID No. 3955 | 1036778 | 1036781 | 1037686 | Seq. ID No. 3956 |
| 1893 | Seq. ID No. 3957 | 1037696 | 1037708 | 1038250 | Seq. ID No. 3958 |
| 1894c | Seq. ID No. 3959 | 1039058 | 1039037 | 1038525 | Seq. ID No. 3960 |
| 1895 | Seq. ID No. 3961 | 1039206 | 1039179 | 1038955 | Seq. ID No. 3962 |
| 1896a | Seq. ID No. 3963 | 1039673 | 1039535 | 1039275 | Seq. ID No. 3964 |
| 1896b | Seq. ID No. 3965 | 1039673 | 1039670 | 1039275 | Seq. ID No. 3966 |
| 1897a | Seq. ID No. 3967 | 1038235 | 1038385 | 1039677 | Seq. ID No. 3968 |
| 1897b | Seq. ID No. 3969 | 1038235 | 1038367 | 1039677 | Seq. ID No. 3970 |
| 1897c | Seq. ID No. 3971 | 1038235 | 1038247 | 1039677 | Seq. ID No. 3972 |
| 1898a | Seq. ID No. 3973 | 1040455 | 1040092 | 1039814 | Seq. ID No. 3974 |
| 1898b | Seq. ID No. 3975 | 1040455 | 1040443 | 1039814 | Seq. ID No. 3976 |
| 1899 | Seq. ID No. 3977 | 1039856 | 1039856 | 1039984 | Seq. ID No. 3978 |
| 1900 | Seq. ID No. 3979 | 1040697 | 1040739 | 1041041 | Seq. ID No. 3980 |
| 1902a | Seq. ID No. 3981 | 1040639 | 1040720 | 1042606 | Seq. ID No. 3982 |
| 1902b | Seq. ID No. 3983 | 1040639 | 1040645 | 1042606 | Seq. ID No. 3984 |
| 1907 | Seq. ID No. 3985 | 1042729 | 1042732 | 1045191 | Seq. ID No. 3986 |
| 1912 | Seq. ID No. 3987 | 1045328 | 1045331 | 1047583 | Seq. ID No. 3988 |
| 1915a | Seq. ID No. 3989 | 1047614 | 1047626 | 1048372 | Seq. ID No. 3990 |
| 1915b | Seq. ID No. 3991 | 1047614 | 1047620 | 1048372 | Seq. ID No. 3992 |
| 1916 | Seq. ID No. 3993 | 1048741 | 1048741 | 1048932 | Seq. ID No. 3994 |
| 1917a | Seq. ID No. 3995 | 1049809 | 1049785 | 1049450 | Seq. ID No. 3996 |
| 1917b | Seq. ID No. 3997 | 1049809 | 1049806 | 1049450 | Seq. ID No. 3998 |
| 1918b | Seq. ID No. 3999 | 1049037 | 1049160 | 1049855 | Seq. ID No. 4000 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 1918c | Seq. ID No. 4001 | 1049037 | 1049073 | 1049855 | Seq. ID No. 4002 |
| 1918d | Seq. ID No. 4003 | 1049037 | 1049058 | 1049855 | Seq. ID No. 4004 |
| 1919a | Seq. ID No. 4005 | 1050015 | 1050093 | 1050395 | Seq. ID No. 4006 |
| 1919b | Seq. ID No. 4007 | 1050015 | 1050060 | 1050395 | Seq. ID No. 4008 |
| 1919c | Seq. ID No. 4009 | 1050015 | 1050033 | 1050395 | Seq. ID No. 4010 |
| 1923a | Seq. ID No. 4011 | 1050906 | 1050942 | 1051274 | Seq. ID No. 4012 |
| 1923b | Seq. ID No. 4013 | 1050906 | 1050921 | 1051274 | Seq. ID No. 4014 |
| 1925 | Seq. ID No. 4015 | 1051259 | 1051301 | 1053043 | Seq. ID No. 4016 |
| 1926 | Seq. ID No. 4017 | 1056054 | 1056039 | 1053739 | Seq. ID No. 4018 |
| 1927a | Seq. ID No. 4019 | 1057220 | 1056728 | 1056186 | Seq. ID No. 4020 |
| 1927b | Seq. ID No. 4021 | 1057220 | 1057217 | 1056186 | Seq. ID No. 4022 |
| 1930 | Seq. ID No. 4023 | 1057377 | 1057383 | 1058411 | Seq. ID No. 4024 |
| 1931a | Seq. ID No. 4025 | 1059508 | 1058830 | 1058501 | Seq. ID No. 4026 |
| 1931b | Seq. ID No. 4027 | 1059508 | 1058938 | 1058501 | Seq. ID No. 4028 |
| 1931c | Seq. ID No. 4029 | 1059508 | 1059370 | 1058501 | Seq. ID No. 4030 |
| 1932 | Seq. ID No. 4031 | 1059744 | 1059726 | 1059454 | Seq. ID No. 4032 |
| 1933a | Seq. ID No. 4033 | 1060398 | 1060266 | 1059748 | Seq. ID No. 4034 |
| 1933b | Seq. ID No. 4035 | 1060398 | 1060398 | 1059748 | Seq. ID No. 4036 |
| 1934 | Seq. ID No. 4037 | 1061142 | 1061124 | 1060399 | Seq. ID No. 4038 |
| 1936 | Seq. ID No. 4039 | 1062327 | 1062327 | 1061245 | Seq. ID No. 4040 |
| 1937a | Seq. ID No. 4041 | 1063629 | 1062585 | 1062328 | Seq. ID No. 4042 |
| 1937b | Seq. ID No. 4043 | 1063629 | 1062750 | 1062328 | Seq. ID No. 4044 |
| 1937c | Seq. ID No. 4045 | 1063629 | 1062804 | 1062328 | Seq. ID No. 4046 |
| 1937d | Seq. ID No. 4047 | 1063629 | 1063587 | 1062328 | Seq. ID No. 4048 |
| 1937e | Seq. ID No. 4049 | 1063629 | 1063596 | 1062328 | Seq. ID No. 4050 |
| 1939a | Seq. ID No. 4051 | 1064617 | 1064539 | 1063607 | Seq. ID No. 4052 |
| 1939b | Seq. ID No. 4053 | 1064617 | 1064596 | 1063607 | Seq. ID No. 4054 |
| 1939c | Seq. ID No. 4055 | 1064617 | 1064614 | 1063607 | Seq. ID No. 4056 |
| 1940 | Seq. ID No. 4057 | 1065300 | 1065288 | 1064641 | Seq. ID No. 4058 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 1941a | Seq. ID No. 4059 | 1066411 | 1066216 | 1065281 | Seq. ID No. 4060 |
| 1941b | Seq. ID No. 4061 | 1066411 | 1066393 | 1065281 | Seq. ID No. 4062 |
| 1942 | Seq. ID No. 4063 | 1067113 | 1067026 | 1066649 | Seq. ID No. 4064 |
| 1943a | Seq. ID No. 4065 | 1067802 | 1067511 | 1067122 | Seq. ID No. 4066 |
| 1943b | Seq. ID No. 4067 | 1067802 | 1067544 | 1067122 | Seq. ID No. 4068 |
| 1944 | Seq. ID No. 4069 | 1067921 | 1067873 | 1067535 | Seq. ID No. 4070 |
| 1946a | Seq. ID No. 4071 | 1069576 | 1068571 | 1068113 | Seq. ID No. 4072 |
| 1946b | Seq. ID No. 4073 | 1069576 | 1069309 | 1068113 | Seq. ID No. 4074 |
| 1946c | Seq. ID No. 4075 | 1069576 | 1069570 | 1068113 | Seq. ID No. 4076 |
| 1949 | Seq. ID No. 4077 | 1069969 | 1069969 | 1069706 | Seq. ID No. 4078 |
| 1950 | Seq. ID No. 4079 | 1070524 | 1070500 | 1069970 | Seq. ID No. 4080 |
| 1951a | Seq. ID No. 4081 | 1072333 | 1072153 | 1070546 | Seq. ID No. 4082 |
| 1951b | Seq. ID No. 4083 | 1072333 | 1072267 | 1070546 | Seq. ID No. 4084 |
| 1951c | Seq. ID No. 4085 | 1072333 | 1072279 | 1070546 | Seq. ID No. 4086 |
| 1951d | Seq. ID No. 4087 | 1072333 | 1072321 | 1070546 | Seq. ID No. 4088 |
| 1953 | Seq. ID No. 4089 | 1073298 | 1073298 | 1072453 | Seq. ID No. 4090 |
| 1954a | Seq. ID No. 4091 | 1074218 | 1074092 | 1073424 | Seq. ID No. 4092 |
| 1954b | Seq. ID No. 4093 | 1074218 | 1074155 | 1073424 | Seq. ID No. 4094 |
| 1954c | Seq. ID No. 4095 | 1074218 | 1074167 | 1073424 | Seq. ID No. 4096 |
| 1956 | Seq. ID No. 4097 | 1074927 | 1074882 | 1074442 | Seq. ID No. 4098 |
| 1957 | Seq. ID No. 4099 | 1075766 | 1075754 | 1074945 | Seq. ID No. 4100 |
| 1958a | Seq. ID No. 4101 | 1076688 | 1076142 | 1075747 | Seq. ID No. 4102 |
| 1958b | Seq. ID No. 4103 | 1076688 | 1076502 | 1075747 | Seq. ID No. 4104 |
| 1958c | Seq. ID No. 4105 | 1076688 | 1076646 | 1075747 | Seq. ID No. 4106 |
| 1960a | Seq. ID No. 4107 | 1077650 | 1077386 | 1076643 | Seq. ID No. 4108 |
| 1960b | Seq. ID No. 4109 | 1077650 | 1077530 | 1076643 | Seq. ID No. 4110 |
| 1960c | Seq. ID No. 4111 | 1077650 | 1077635 | 1076643 | Seq. ID No. 4112 |
| 1961 | Seq. ID No. 4113 | 1076360 | 1076369 | 1076734 | Seq. ID No. 4114 |
| 1962a | Seq. ID No. 4115 | 1079051 | 1079006 | 1077744 | Seq. ID No. 4116 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 1962b | Seq. ID No. 4117 | 1079051 | 1079039 | 1077744 | Seq. ID No. 4118 |
| 1965a | Seq. ID No. 4119 | 1080385 | 1080358 | 1079804 | Seq. ID No. 4120 |
| 1965b | Seq. ID No. 4121 | 1080385 | 1080367 | 1079804 | Seq. ID No. 4122 |
| 1966 | Seq. ID No. 4123 | 1080971 | 1080932 | 1080441 | Seq. ID No. 4124 |
| 1967 | Seq. ID No. 4125 | 1081519 | 1081510 | 1081103 | Seq. ID No. 4126 |
| 1968 | Seq. ID No. 4127 | 1082563 | 1082482 | 1081568 | Seq. ID No. 4128 |
| 1969 | Seq. ID No. 4129 | 1082949 | 1082946 | 1082479 | Seq. ID No. 4130 |
| 1970a | Seq. ID No. 4131 | 1083034 | 1083196 | 1083726 | Seq. ID No. 4132 |
| 1970b | Seq. ID No. 4133 | 1083034 | 1083067 | 1083726 | Seq. ID No. 4134 |
| 1972 | Seq. ID No. 4135 | 1084033 | 1084045 | 1084338 | Seq. ID No. 4136 |
| 1973 | Seq. ID No. 4137 | 1083717 | 1083723 | 1084562 | Seq. ID No. 4138 |
| 1976 | Seq. ID No. 4139 | 1085958 | 1085958 | 1085671 | Seq. ID No. 4140 |
| 1977a | Seq. ID No. 4141 | 1084534 | 1084552 | 1085925 | Seq. ID No. 4142 |
| 1977b | Seq. ID No. 4143 | 1084534 | 1084540 | 1085925 | Seq. ID No. 4144 |
| 1977c | Seq. ID No. 4145 | 1084534 | 1084534 | 1085925 | Seq. ID No. 4146 |
| 1979a | Seq. ID No. 4147 | 1090104 | 1089960 | 1086301 | Seq. ID No. 4148 |
| 1979b | Seq. ID No. 4149 | 1090104 | 1090077 | 1086301 | Seq. ID No. 4150 |
| 1980a | Seq. ID No. 4151 | 1088858 | 1088837 | 1088577 | Seq. ID No. 4152 |
| 1980b | Seq. ID No. 4153 | 1088858 | 1088855 | 1088577 | Seq. ID No. 4154 |
| 1981 | Seq. ID No. 4155 | 1089710 | 1089743 | 1090015 | Seq. ID No. 4156 |
| 1982 | Seq. ID No. 4157 | 1093702 | 1093678 | 1090049 | Seq. ID No. 4158 |
| 1985a | Seq. ID No. 4159 | 1095093 | 1094937 | 1093696 | Seq. ID No. 4160 |
| 1985b | Seq. ID No. 4161 | 1095093 | 1095036 | 1093696 | Seq. ID No. 4162 |
| 1986 | Seq. ID No. 4163 | 1096130 | 1096085 | 1094955 | Seq. ID No. 4164 |
| 1987a | Seq. ID No. 4165 | 1096803 | 1096599 | 1096072 | Seq. ID No. 4166 |
| 1987b | Seq. ID No. 4167 | 1096803 | 1096779 | 1096072 | Seq. ID No. 4168 |
| 1989a | Seq. ID No. 4169 | 1097597 | 1097564 | 1096920 | Seq. ID No. 4170 |
| 1989b | Seq. ID No. 4171 | 1097597 | 1097585 | 1096920 | Seq. ID No. 4172 |
| 1989c | Seq. ID No. 4173 | 1097597 | 1097588 | 1096920 | Seq. ID No. 4174 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 1990a | Seq. ID No. 4175 | 1098801 | 1098660 | 1097689 | Seq. ID No. 4176 |
| 1990b | Seq. ID No. 4177 | 1098801 | 1098744 | 1097689 | Seq. ID No. 4178 |
| 1990c | Seq. ID No. 4179 | 1098801 | 1098798 | 1097689 | Seq. ID No. 4180 |
| 1991 | Seq. ID No. 4181 | 1098269 | 1098332 | 1098715 | Seq. ID No. 4182 |
| 1992a | Seq. ID No. 4183 | 1100670 | 1100409 | 1098817 | Seq. ID No. 4184 |
| 1992b | Seq. ID No. 4185 | 1100670 | 1100670 | 1098817 | Seq. ID No. 4186 |
| 1993a | Seq. ID No. 4187 | 1103997 | 1103709 | 1100698 | Seq. ID No. 4188 |
| 1993b | Seq. ID No. 4189 | 1103997 | 1103943 | 1100698 | Seq. ID No. 4190 |
| 1993c | Seq. ID No. 4191 | 1103997 | 1103985 | 1100698 | Seq. ID No. 4192 |
| 1996 | Seq. ID No. 4193 | 1106269 | 1106263 | 1104185 | Seq. ID No. 4194 |
| 2000 | Seq. ID No. 4195 | 1107254 | 1107176 | 1106244 | Seq. ID No. 4196 |
| 2001 | Seq. ID No. 4197 | 1108224 | 1108203 | 1107433 | Seq. ID No. 4198 |
| 2003 | Seq. ID No. 4199 | 1109198 | 1109144 | 1108212 | Seq. ID No. 4200 |
| 2006 | Seq. ID No. 4201 | 1109556 | 1109550 | 1109131 | Seq. ID No. 4202 |
| 2008 | Seq. ID No. 4203 | 1109960 | 1109942 | 1109565 | Seq. ID No. 4204 |
| 2010 | Seq. ID No. 4205 | 1110423 | 1110420 | 1109926 | Seq. ID No. 4206 |
| 2011a | Seq. ID No. 4207 | 1111515 | 1111290 | 1110424 | Seq. ID No. 4208 |
| 2011b | Seq. ID No. 4209 | 1111515 | 1111335 | 1110424 | Seq. ID No. 4210 |
| 2011c | Seq. ID No. 4211 | 1111515 | 1111476 | 1110424 | Seq. ID No. 4212 |
| 2013a | Seq. ID No. 4213 | 1112031 | 1111983 | 1111570 | Seq. ID No. 4214 |
| 2013b | Seq. ID No. 4215 | 1112031 | 1112013 | 1111570 | Seq. ID No. 4216 |
| 2014c | Seq. ID No. 4217 | 1112923 | 1112905 | 1112459 | Seq. ID No. 4218 |
| 2015 | Seq. ID No. 4219 | 1112955 | 1112988 | 1113797 | Seq. ID No. 4220 |
| 2016a | Seq. ID No. 4221 | 1115435 | 1114151 | 1113879 | Seq. ID No. 4222 |
| 2016b | Seq. ID No. 4223 | 1115435 | 1114319 | 1113879 | Seq. ID No. 4224 |
| 2016c | Seq. ID No. 4225 | 1115435 | 1114655 | 1113879 | Seq. ID No. 4226 |
| 2016d | Seq. ID No. 4227 | 1115435 | 1115117 | 1113879 | Seq. ID No. 4228 |
| 2016e | Seq. ID No. 4229 | 1115435 | 1115213 | 1113879 | Seq. ID No. 4230 |
| 2016f | Seq. ID No. 4231 | 1115435 | 1115306 | 1113879 | Seq. ID No. 4232 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 2016g | Seq. ID No. 4233 | 1115435 | 1115360 | 1113879 | Seq. ID No. 4234 |
| 2016h | Seq. ID No. 4235 | 1115435 | 1115390 | 1113879 | Seq. ID No. 4236 |
| 2020 | Seq. ID No. 4237 | 1115867 | 1115864 | 1115451 | Seq. ID No. 4238 |
| 2021 | Seq. ID No. 4239 | 1116881 | 1116842 | 1115868 | Seq. ID No. 4240 |
| 2023a | Seq. ID No. 4241 | 1117636 | 1117222 | 1116860 | Seq. ID No. 4242 |
| 2023b | Seq. ID No. 4243 | 1117636 | 1117546 | 1116860 | Seq. ID No. 4244 |
| 2024a | Seq. ID No. 4245 | 1120274 | 1120019 | 1117974 | Seq. ID No. 4246 |
| 2024b | Seq. ID No. 4247 | 1120274 | 1120139 | 1117974 | Seq. ID No. 4248 |
| 2024c | Seq. ID No. 4249 | 1120274 | 1120199 | 1117974 | Seq. ID No. 4250 |
| 2024d | Seq. ID No. 4251 | 1120274 | 1120241 | 1117974 | Seq. ID No. 4252 |
| 2025 | Seq. ID No. 4253 | 1117941 | 1117962 | 1118285 | Seq. ID No. 4254 |
| 2027 | Seq. ID No. 4255 | 1120944 | 1120941 | 1120333 | Seq. ID No. 4256 |
| 2030a | Seq. ID No. 4257 | 1121092 | 1121569 | 1121886 | Seq. ID No. 4258 |
| 2030b | Seq. ID No. 4259 | 1121092 | 1121170 | 1121886 | Seq. ID No. 4260 |
| 2030c | Seq. ID No. 4261 | 1121092 | 1121146 | 1121886 | Seq. ID No. 4262 |
| 2030d | Seq. ID No. 4263 | 1121092 | 1121110 | 1121886 | Seq. ID No. 4264 |
| 2032c | Seq. ID No. 4265 | 1122301 | 1122400 | 1122681 | Seq. ID No. 4266 |
| 2033 | Seq. ID No. 4267 | 1121958 | 1121985 | 1122926 | Seq. ID No. 4268 |
| 2035b | Seq. ID No. 4269 | 1124479 | 1124464 | 1124108 | Seq. ID No. 4270 |
| 2036 | Seq. ID No. 4271 | 1123137 | 1123161 | 1124852 | Seq. ID No. 4272 |
| 2037 | Seq. ID No. 4273 | 1126339 | 1126327 | 1125326 | Seq. ID No. 4274 |
| 2038a | Seq. ID No. 4275 | 1126251 | 1126158 | 1125856 | Seq. ID No. 4276 |
| 2040a | Seq. ID No. 4277 | 1125890 | 1125932 | 1126255 | Seq. ID No. 4278 |
| 2042 | Seq. ID No. 4279 | 1126698 | 1126698 | 1127249 | Seq. ID No. 4280 |
| 2043b | Seq. ID No. 4281 | 1127254 | 1127254 | 1128054 | Seq. ID No. 4282 |
| 2044 | Seq. ID No. 4283 | 1129041 | 1129041 | 1128340 | Seq. ID No. 4284 |
| 2045a | Seq. ID No. 4285 | 1128368 | 1128383 | 1128649 | Seq. ID No. 4286 |
| 2045b | Seq. ID No. 4287 | 1128368 | 1128371 | 1128649 | Seq. ID No. 4288 |
| 2046a | Seq. ID No. 4289 | 1130349 | 1130322 | 1129096 | Seq. ID No. 4290 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 2046b | Seq. ID No. 4291 | 1130349 | 1130349 | 1129096 | Seq. ID No. 4292 |
| 2047a | Seq. ID No. 4293 | 1131789 | 1131750 | 1130452 | Seq. ID No. 4294 |
| 2047b | Seq. ID No. 4295 | 1131789 | 1131762 | 1130452 | Seq. ID No. 4296 |
| 2049c | Seq. ID No. 4297 | 1132248 | 1132347 | 1132628 | Seq. ID No. 4298 |
| 2050 | Seq. ID No. 4299 | 1131905 | 1131932 | 1132873 | Seq. ID No. 4300 |
| 2053 | Seq. ID No. 4301 | 1133117 | 1133117 | 1134556 | Seq. ID No. 4302 |
| 2054 | Seq. ID No. 4303 | 1135143 | 1135140 | 1134631 | Seq. ID No. 4304 |
| 2055 | Seq. ID No. 4305 | 1135139 | 1135139 | 1135279 | Seq. ID No. 4306 |
| 2056 | Seq. ID No. 4307 | 1135786 | 1135771 | 1135430 | Seq. ID No. 4308 |
| 2057 | Seq. ID No. 4309 | 1137026 | 1137020 | 1135758 | Seq. ID No. 4310 |
| 2059a | Seq. ID No. 4311 | 1137134 | 1137374 | 1138240 | Seq. ID No. 4312 |
| 2059b | Seq. ID No. 4313 | 1137134 | 1137140 | 1138240 | Seq. ID No. 4314 |
| 2060a | Seq. ID No. 4315 | 1138968 | 1138920 | 1138384 | Seq. ID No. 4316 |
| 2060b | Seq. ID No. 4317 | 1138968 | 1138962 | 1138384 | Seq. ID No. 4318 |
| 2062a | Seq. ID No. 4319 | 1140218 | 1140038 | 1139013 | Seq. ID No. 4320 |
| 2062b | Seq. ID No. 4321 | 1140218 | 1140119 | 1139013 | Seq. ID No. 4322 |
| 2062c | Seq. ID No. 4323 | 1140218 | 1140200 | 1139013 | Seq. ID No. 4324 |
| 2064 | Seq. ID No. 4325 | 1141198 | 1141186 | 1140200 | Seq. ID No. 4326 |
| 2065a | Seq. ID No. 4327 | 1142468 | 1142435 | 1141179 | Seq. ID No. 4328 |
| 2065b | Seq. ID No. 4329 | 1142468 | 1142465 | 1141179 | Seq. ID No. 4330 |
| 2066 | Seq. ID No. 4331 | 1143393 | 1143375 | 1142428 | Seq. ID No. 4332 |
| 2068 | Seq. ID No. 4333 | 1145373 | 1145277 | 1143484 | Seq. ID No. 4334 |
| 2069a | Seq. ID No. 4335 | 1146734 | 1146590 | 1145292 | Seq. ID No. 4336 |
| 2069b | Seq. ID No. 4337 | 1146734 | 1146608 | 1145292 | Seq. ID No. 4338 |
| 2069c | Seq. ID No. 4339 | 1146734 | 1146662 | 1145292 | Seq. ID No. 4340 |
| 2074a | Seq. ID No. 4341 | 1147059 | 1147179 | 1148387 | Seq. ID No. 4342 |
| 2074b | Seq. ID No. 4343 | 1147059 | 1147074 | 1148387 | Seq. ID No. 4344 |
| 2075a | Seq. ID No. 4345 | 1149029 | 1148891 | 1148439 | Seq. ID No. 4346 |
| 2075b | Seq. ID No. 4347 | 1149029 | 1148894 | 1148439 | Seq. ID No. 4348 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 2076a | Seq. ID No. 4349 | 1151134 | 1151065 | 1148912 | Seq. ID No. 4350 |
| 2076b | Seq. ID No. 4351 | 1151134 | 1151122 | 1148912 | Seq. ID No. 4352 |
| 2076c | Seq. ID No. 4353 | 1151134 | 1151131 | 1148912 | Seq. ID No. 4354 |
| 2078 | Seq. ID No. 4355 | 1151921 | 1151906 | 1151253 | Seq. ID No. 4356 |
| 2079a | Seq. ID No. 4357 | 1152998 | 1152887 | 1151922 | Seq. ID No. 4358 |
| 2079b | Seq. ID No. 4359 | 1152998 | 1152926 | 1151922 | Seq. ID No. 4360 |
| 2079c | Seq. ID No. 4361 | 1152998 | 1152989 | 1151922 | Seq. ID No. 4362 |
| 2081a | Seq. ID No. 4363 | 1153482 | 1153383 | 1152865 | Seq. ID No. 4364 |
| 2081b | Seq. ID No. 4365 | 1153482 | 1153419 | 1152865 | Seq. ID No. 4366 |
| 2086a | Seq. ID No. 4367 | 1153561 | 1153570 | 1154904 | Seq. ID No. 4368 |
| 2086b | Seq. ID No. 4369 | 1153561 | 1153561 | 1154904 | Seq. ID No. 4370 |
| 2087a | Seq. ID No. 4371 | 1154925 | 1154952 | 1155377 | Seq. ID No. 4372 |
| 2087b | Seq. ID No. 4373 | 1154925 | 1154934 | 1155377 | Seq. ID No. 4374 |
| 2088 | Seq. ID No. 4375 | 1156149 | 1156134 | 1155403 | Seq. ID No. 4376 |
| 2091 | Seq. ID No. 4377 | 1156470 | 1156494 | 1157174 | Seq. ID No. 4378 |
| 2092 | Seq. ID No. 4379 | 1157162 | 1157174 | 1157866 | Seq. ID No. 4380 |
| 2093a | Seq. ID No. 4381 | 1157784 | 1157838 | 1158065 | Seq. ID No. 4382 |
| 2094 | Seq. ID No. 4383 | 1158149 | 1158164 | 1158913 | Seq. ID No. 4384 |
| 2096a | Seq. ID No. 4385 | 1158888 | 1159740 | 1160903 | Seq. ID No. 4386 |
| 2096b | Seq. ID No. 4387 | 1158888 | 1159086 | 1160903 | Seq. ID No. 4388 |
| 2096c | Seq. ID No. 4389 | 1158888 | 1158915 | 1160903 | Seq. ID No. 4390 |
| 2096d | Seq. ID No. 4391 | 1158888 | 1158906 | 1160903 | Seq. ID No. 4392 |
| 2097 | Seq. ID No. 4393 | 1163111 | 1163090 | 1161267 | Seq. ID No. 4394 |
| 2098b | Seq. ID No. 4395 | 1161405 | 1161474 | 1161959 | Seq. ID No. 4396 |
| 2100 | Seq. ID No. 4397 | 1164393 | 1164378 | 1163221 | Seq. ID No. 4398 |
| 2101 | Seq. ID No. 4399 | 1164206 | 1164203 | 1163817 | Seq. ID No. 4400 |
| 2104 | Seq. ID No. 4401 | 1166334 | 1166304 | 1164466 | Seq. ID No. 4402 |
| 2105 | Seq. ID No. 4403 | 1164590 | 1164728 | 1164985 | Seq. ID No. 4404 |
| 2107a | Seq. ID No. 4405 | 1164986 | 1165082 | 1165558 | Seq. ID No. 4406 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 2107b | Seq. ID No. 4407 | 1164986 | 1165040 | 1165558 | Seq. ID No. 4408 |
| 2109a | Seq. ID No. 4409 | 1166983 | 1166947 | 1166375 | Seq. ID No. 4410 |
| 2109b | Seq. ID No. 4411 | 1166983 | 1166968 | 1166375 | Seq. ID No. 4412 |
| 2110a | Seq. ID No. 4413 | 1168054 | 1168024 | 1166984 | Seq. ID No. 4414 |
| 2110b | Seq. ID No. 4415 | 1168054 | 1168045 | 1166984 | Seq. ID No. 4416 |
| 2110c | Seq. ID No. 4417 | 1168054 | 1168048 | 1166984 | Seq. ID No. 4418 |
| 2112a | Seq. ID No. 4419 | 1169192 | 1168997 | 1168212 | Seq. ID No. 4420 |
| 2112b | Seq. ID No. 4421 | 1169192 | 1169051 | 1168212 | Seq. ID No. 4422 |
| 2112c | Seq. ID No. 4423 | 1169192 | 1169159 | 1168212 | Seq. ID No. 4424 |
| 2114b | Seq. ID No. 4425 | 1168308 | 1168356 | 1168880 | Seq. ID No. 4426 |
| 2115a | Seq. ID No. 4427 | 1170166 | 1170046 | 1169168 | Seq. ID No. 4428 |
| 2115b | Seq. ID No. 4429 | 1170166 | 1170091 | 1169168 | Seq. ID No. 4430 |
| 2115c | Seq. ID No. 4431 | 1170166 | 1170157 | 1169168 | Seq. ID No. 4432 |
| 2116 | Seq. ID No. 4433 | 1170571 | 1170541 | 1170185 | Seq. ID No. 4434 |
| 2117 | Seq. ID No. 4435 | 1172931 | 1172919 | 1170559 | Seq. ID No. 4436 |
| 2120a | Seq. ID No. 4437 | 1170911 | 1170998 | 1171270 | Seq. ID No. 4438 |
| 2120b | Seq. ID No. 4439 | 1170911 | 1170983 | 1171270 | Seq. ID No. 4440 |
| 2122b | Seq. ID No. 4441 | 1172314 | 1172344 | 1172679 | Seq. ID No. 4442 |
| 2123 | Seq. ID No. 4443 | 1173237 | 1173237 | 1172935 | Seq. ID No. 4444 |
| 2124a | Seq. ID No. 4445 | 1173535 | 1173502 | 1173227 | Seq. ID No. 4446 |
| 2124b | Seq. ID No. 4447 | 1173535 | 1173523 | 1173227 | Seq. ID No. 4448 |
| 2125a | Seq. ID No. 4449 | 1174978 | 1174948 | 1173578 | Seq. ID No. 4450 |
| 2125b | Seq. ID No. 4451 | 1174978 | 1174975 | 1173578 | Seq. ID No. 4452 |
| 2127a | Seq. ID No. 4453 | 1174343 | 1174370 | 1174894 | Seq. ID No. 4454 |
| 2127b | Seq. ID No. 4455 | 1174343 | 1174349 | 1174894 | Seq. ID No. 4456 |
| 2128a | Seq. ID No. 4457 | 1175492 | 1175444 | 1174965 | Seq. ID No. 4458 |
| 2128b | Seq. ID No. 4459 | 1175492 | 1175456 | 1174965 | Seq. ID No. 4460 |
| 2133 | Seq. ID No. 4461 | 1179995 | 1179938 | 1175604 | Seq. ID No. 4462 |
| 2138a | Seq. ID No. 4463 | 1181752 | 1181653 | 1180022 | Seq. ID No. 4464 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|---------------|----------------------|-----------|------------------|----------|--------------------------|
| 2138b | Seq. ID No. 4465 | 1181752 | 1181728 | 1180022 | Seq. ID No. 4466 |
| 2138c | Seq. ID No. 4467 | 1181752 | 1181737 | 1180022 | Seq. ID No. 4468 |
| 2140a | Seq. ID No. 4469 | 1183087 | 1182526 | 1181753 | Seq. ID No. 4470 |
| 2140b | Seq. ID No. 4471 | 1183087 | 1183021 | 1181753 | Seq. ID No. 4472 |
| 2142a | Seq. ID No. 4473 | 1183896 | 1183278 | 1183039 | Seq. ID No. 4474 |
| 2142b | Seq. ID No. 4475 | 1183896 | 1183833 | 1183039 | Seq. ID No. 4476 |
| 2144a | Seq. ID No. 4477 | 1184612 | 1184585 | 1183848 | Seq. ID No. 4478 |
| 2144b | Seq. ID No. 4479 | 1184612 | 1184603 | 1183848 | Seq. ID No. 4480 |
| 2146 | Seq. ID No. 4481 | 1185730 | 1185712 | 1184780 | Seq. ID No. 4482 |
| 2147a | Seq. ID No. 4483 | 1186442 | 1185977 | 1185735 | Seq. ID No. 4484 |
| 2147b | Seq. ID No. 4485 | 1186442 | 1186334 | 1185735 | Seq. ID No. 4486 |
| 2147c | Seq. ID No. 4487 | 1186442 | 1186436 | 1185735 | Seq. ID No. 4488 |
| 2149a | Seq. ID No. 4489 | 1187547 | 1187235 | 1186429 | Seq. ID No. 4490 |
| 2149b | Seq. ID No. 4491 | 1187547 | 1187448 | 1186429 | Seq. ID No. 4492 |
| 2150a | Seq. ID No. 4493 | 1186646 | 1186742 | 1187041 | Seq. ID No. 4494 |
| 2150b | Seq. ID No. 4495 | 1186646 | 1186736 | 1187041 | Seq. ID No. 4496 |
| 2150c | Seq. ID No. 4497 | 1186646 | 1186703 | 1187041 | Seq. ID No. 4498 |
| 2152a | Seq. ID No. 4499 | 1188368 | 1188338 | 1188096 | Seq. ID No. 4500 |
| 2153 | Seq. ID No. 4501 | 1189235 | 1189223 | 1188666 | Seq. ID No. 4502 |
| 2155a | Seq. ID No. 4503 | 1189980 | 1189947 | 1189216 | Seq. ID No. 4504 |
| 2155b | Seq. ID No. 4505 | 1189980 | 1189965 | 1189216 | Seq. ID No. 4506 |
| 2156a | Seq. ID No. 4507 | 1190977 | 1190908 | 1190087 | Seq. ID No. 4508 |
| 2156b | Seq. ID No. 4509 | 1190977 | 1190941 | 1190087 | Seq. ID No. 4510 |
| 2156c | Seq. ID No. 4511 | 1190977 | 1190965 | 1190087 | Seq. ID No. 4512 |
| 2159a | Seq. ID No. 4513 | 1190613 | 1190619 | 1190945 | Seq. ID No. 4514 |
| 2159b | Seq. ID No. 4515 | 1190613 | 1190616 | 1190945 | Seq. ID No. 4516 |
| 2160a | Seq. ID No. 4517 | 1191908 | 1191713 | 1191027 | Seq. ID No. 4518 |
| 2160b | Seq. ID No. 4519 | 1191908 | 1191791 | 1191027 | Seq. ID No. 4520 |
| 2160c | Seq. ID No. 4521 | 1191908 | 1191845 | 1191027 | Seq. ID No. 4522 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 2160d | Seq. ID No. 4523 | 1191908 | 1191872 | 1191027 | Seq. ID No. 4524 |
| 2161a | Seq. ID No. 4525 | 1190995 | 1191142 | 1191522 | Seq. ID No. 4526 |
| 2161b | Seq. ID No. 4527 | 1190995 | 1191037 | 1191522 | Seq. ID No. 4528 |
| 2161c | Seq. ID No. 4529 | 1190995 | 1191001 | 1191522 | Seq. ID No. 4530 |
| 2164 | Seq. ID No. 4531 | 1191988 | 1192009 | 1192626 | Seq. ID No. 4532 |
| 2165 | Seq. ID No. 4533 | 1192933 | 1192903 | 1192676 | Seq. ID No. 4534 |
| 2166a | Seq. ID No. 4535 | 1194996 | 1194612 | 1193065 | Seq. ID No. 4536 |
| 2166b | Seq. ID No. 4537 | 1194996 | 1194993 | 1193065 | Seq. ID No. 4538 |
| 2169 | Seq. ID No. 4539 | 1195265 | 1195253 | 1195011 | Seq. ID No. 4540 |
| 2171 | Seq. ID No. 4541 | 1195373 | 1195388 | 1196059 | Seq. ID No. 4542 |
| 2172 | Seq. ID No. 4543 | 1196128 | 1196143 | 1196508 | Seq. ID No. 4544 |
| 2173a | Seq. ID No. 4545 | 1197663 | 1197603 | 1196563 | Seq. ID No. 4546 |
| 2173b | Seq. ID No. 4547 | 1197663 | 1197618 | 1196563 | Seq. ID No. 4548 |
| 2174 | Seq. ID No. 4549 | 1198165 | 1198165 | 1197650 | Seq. ID No. 4550 |
| 2175 | Seq. ID No. 4551 | 1197212 | 1197287 | 1197667 | Seq. ID No. 4552 |
| 2176a | Seq. ID No. 4553 | 1200498 | 1200012 | 1198177 | Seq. ID No. 4554 |
| 2176b | Seq. ID No. 4555 | 1200498 | 1200204 | 1198177 | Seq. ID No. 4556 |
| 2176c | Seq. ID No. 4557 | 1200498 | 1200297 | 1198177 | Seq. ID No. 4558 |
| 2176d | Seq. ID No. 4559 | 1200498 | 1200480 | 1198177 | Seq. ID No. 4560 |
| 2177b | Seq. ID No. 4561 | 1199045 | 1199054 | 1199458 | Seq. ID No. 4562 |
| 2179a | Seq. ID No. 4563 | 1201338 | 1201272 | 1200499 | Seq. ID No. 4564 |
| 2179b | Seq. ID No. 4565 | 1201338 | 1201329 | 1200499 | Seq. ID No. 4566 |
| 2180 | Seq. ID No. 4567 | 1202280 | 1202268 | 1201339 | Seq. ID No. 4568 |
| 2181a | Seq. ID No. 4569 | 1203606 | 1203582 | 1202281 | Seq. ID No. 4570 |
| 2181b | Seq. ID No. 4571 | 1203606 | 1203588 | 1202281 | Seq. ID No. 4572 |
| 2182 | Seq. ID No. 4573 | 1203089 | 1203110 | 1203406 | Seq. ID No. 4574 |
| 2183 | Seq. ID No. 4575 | 1204620 | 1204614 | 1203607 | Seq. ID No. 4576 |
| 2185 | Seq. ID No. 4577 | 1205219 | 1205216 | 1204611 | Seq. ID No. 4578 |
| 2186a | Seq. ID No. 4579 | 1206643 | 1206499 | 1205366 | Seq. ID No. 4580 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 2186b | Seq. ID No. 4581 | 1206643 | 1206634 | 1205366 | Seq. ID No. 4582 |
| 2189a | Seq. ID No. 4583 | 1208090 | 1207934 | 1206753 | Seq. ID No. 4584 |
| 2189b | Seq. ID No. 4585 | 1208090 | 1208090 | 1206753 | Seq. ID No. 4586 |
| 2190a | Seq. ID No. 4587 | 1206664 | 1206916 | 1207176 | Seq. ID No. 4588 |
| 2190b | Seq. ID No. 4589 | 1206664 | 1206700 | 1207176 | Seq. ID No. 4590 |
| 2193 | Seq. ID No. 4591 | 1209177 | 1209138 | 1208200 | Seq. ID No. 4592 |
| 2194a | Seq. ID No. 4593 | 1209651 | 1209582 | 1209211 | Seq. ID No. 4594 |
| 2194c | Seq. ID No. 4595 | 1209651 | 1209600 | 1209211 | Seq. ID No. 4596 |
| 2196 | Seq. ID No. 4597 | 1210624 | 1210606 | 1209737 | Seq. ID No. 4598 |
| 2197a | Seq. ID No. 4599 | 1213676 | 1212611 | 1210572 | Seq. ID No. 4600 |
| 2197b | Seq. ID No. 4601 | 1213676 | 1213463 | 1210572 | Seq. ID No. 4602 |
| 2197c | Seq. ID No. 4603 | 1213676 | 1213610 | 1210572 | Seq. ID No. 4604 |
| 2201a | Seq. ID No. 4605 | 1215054 | 1214976 | 1214029 | Seq. ID No. 4606 |
| 2201b | Seq. ID No. 4607 | 1215054 | 1214991 | 1214029 | Seq. ID No. 4608 |
| 2203 | Seq. ID No. 4609 | 1215377 | 1215341 | 1215063 | Seq. ID No. 4610 |
| 2204 | Seq. ID No. 4611 | 1216828 | 1216804 | 1215491 | Seq. ID No. 4612 |
| 2206a | Seq. ID No. 4613 | 1218208 | 1218172 | 1216907 | Seq. ID No. 4614 |
| 2206b | Seq. ID No. 4615 | 1218208 | 1218190 | 1216907 | Seq. ID No. 4616 |
| 2208a | Seq. ID No. 4617 | 1217688 | 1217814 | 1218146 | Seq. ID No. 4618 |
| 2208b | Seq. ID No. 4619 | 1217688 | 1217691 | 1218146 | Seq. ID No. 4620 |
| 2208c | Seq. ID No. 4621 | 1217688 | 1217688 | 1218146 | Seq. ID No. 4622 |
| 2209 | Seq. ID No. 4623 | 1218957 | 1218957 | 1218280 | Seq. ID No. 4624 |
| 2212a | Seq. ID No. 4625 | 1219686 | 1219626 | 1218958 | Seq. ID No. 4626 |
| 2212b | Seq. ID No. 4627 | 1219686 | 1219662 | 1218958 | Seq. ID No. 4628 |
| 2215a | Seq. ID No. 4629 | 1221266 | 1220597 | 1219668 | Seq. ID No. 4630 |
| 2215b | Seq. ID No. 4631 | 1221266 | 1221101 | 1219668 | Seq. ID No. 4632 |
| 2216a | Seq. ID No. 4633 | 1221658 | 1221358 | 1221098 | Seq. ID No. 4634 |
| 2216b | Seq. ID No. 4635 | 1221658 | 1221532 | 1221098 | Seq. ID No. 4636 |
| 2218 | Seq. ID No. 4637 | 1222155 | 1222137 | 1221580 | Seq. ID No. 4638 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 2219a | Seq. ID No. 4639 | 1222926 | 1222596 | 1222252 | Seq. ID No. 4640 |
| 2219b | Seq. ID No. 4641 | 1222926 | 1222881 | 1222252 | Seq. ID No. 4642 |
| 2219c | Seq. ID No. 4643 | 1222926 | 1222920 | 1222252 | Seq. ID No. 4644 |
| 2220a | Seq. ID No. 4645 | 1223944 | 1223878 | 1223180 | Seq. ID No. 4646 |
| 2220b | Seq. ID No. 4647 | 1223944 | 1223899 | 1223180 | Seq. ID No. 4648 |
| 2220c | Seq. ID No. 4649 | 1223944 | 1223938 | 1223180 | Seq. ID No. 4650 |
| 2221 | Seq. ID No. 4651 | 1224470 | 1224470 | 1223904 | Seq. ID No. 4652 |
| 2222 | Seq. ID No. 4653 | 1225280 | 1225268 | 1224471 | Seq. ID No. 4654 |
| 2223a | Seq. ID No. 4655 | 1225739 | 1225661 | 1225281 | Seq. ID No. 4656 |
| 2223b | Seq. ID No. 4657 | 1225739 | 1225700 | 1225281 | Seq. ID No. 4658 |
| 2225 | Seq. ID No. 4659 | 1225293 | 1225299 | 1225634 | Seq. ID No. 4660 |
| 2226 | Seq. ID No. 4661 | 1226654 | 1226639 | 1225824 | Seq. ID No. 4662 |
| 2227 | Seq. ID No. 4663 | 1227837 | 1227819 | 1226650 | Seq. ID No. 4664 |
| 2228a | Seq. ID No. 4665 | 1228938 | 1228710 | 1228009 | Seq. ID No. 4666 |
| 2228b | Seq. ID No. 4667 | 1228938 | 1228809 | 1228009 | Seq. ID No. 4668 |
| 2228c | Seq. ID No. 4669 | 1228938 | 1228920 | 1228009 | Seq. ID No. 4670 |
| 2231 | Seq. ID No. 4671 | 1229408 | 1229393 | 1228929 | Seq. ID No. 4672 |
| 2232 | Seq. ID No. 4673 | 1230413 | 1230371 | 1229511 | Seq. ID No. 4674 |
| 2234a | Seq. ID No. 4675 | 1232266 | 1232191 | 1230434 | Seq. ID No. 4676 |
| 2234b | Seq. ID No. 4677 | 1232266 | 1232194 | 1230434 | Seq. ID No. 4678 |
| 2234c | Seq. ID No. 4679 | 1232266 | 1232203 | 1230434 | Seq. ID No. 4680 |
| 2236a | Seq. ID No. 4681 | 1231236 | 1231488 | 1231871 | Seq. ID No. 4682 |
| 2236b | Seq. ID No. 4683 | 1231236 | 1231266 | 1231871 | Seq. ID No. 4684 |
| 2238 | Seq. ID No. 4685 | 1233192 | 1233186 | 1232224 | Seq. ID No. 4686 |
| 2239b | Seq. ID No. 4687 | 1232255 | 1232264 | 1232569 | Seq. ID No. 4688 |
| 2240a | Seq. ID No. 4689 | 1236616 | 1236499 | 1233293 | Seq. ID No. 4690 |
| 2240b | Seq. ID No. 4691 | 1236616 | 1236571 | 1233293 | Seq. ID No. 4692 |
| 2240c | Seq. ID No. 4693 | 1236616 | 1236607 | 1233293 | Seq. ID No. 4694 |
| 2243a | Seq. ID No. 4695 | 1234812 | 1234866 | 1235147 | Seq. ID No. 4696 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 2244 | Seq. ID No. 4697 | 1237063 | 1237051 | 1236710 | Seq. ID No. 4698 |
| 2245 | Seq. ID No. 4699 | 1236540 | 1236573 | 1236899 | Seq. ID No. 4700 |
| 2246 | Seq. ID No. 4701 | 1237191 | 1237188 | 1236955 | Seq. ID No. 4702 |
| 2248 | Seq. ID No. 4703 | 1237171 | 1237180 | 1237992 | Seq. ID No. 4704 |
| 2249 | Seq. ID No. 4705 | 1240000 | 1239967 | 1238063 | Seq. ID No. 4706 |
| 2253a | Seq. ID No. 4707 | 1240985 | 1240250 | 1239996 | Seq. ID No. 4708 |
| 2253b | Seq. ID No. 4709 | 1240985 | 1240487 | 1239996 | Seq. ID No. 4710 |
| 2253c | Seq. ID No. 4711 | 1240985 | 1240508 | 1239996 | Seq. ID No. 4712 |
| 2253d | Seq. ID No. 4713 | 1240985 | 1240955 | 1239996 | Seq. ID No. 4714 |
| 2255a | Seq. ID No. 4715 | 1241983 | 1241392 | 1240976 | Seq. ID No. 4716 |
| 2255b | Seq. ID No. 4717 | 1241983 | 1241938 | 1240976 | Seq. ID No. 4718 |
| 2256 | Seq. ID No. 4719 | 1242954 | 1242936 | 1241938 | Seq. ID No. 4720 |
| 2257 | Seq. ID No. 4721 | 1241664 | 1241670 | 1241996 | Seq. ID No. 4722 |
| 2259a | Seq. ID No. 4723 | 1243340 | 1243250 | 1242933 | Seq. ID No. 4724 |
| 2259b | Seq. ID No. 4725 | 1243340 | 1243280 | 1242933 | Seq. ID No. 4726 |
| 2260b | Seq. ID No. 4727 | 1243953 | 1243842 | 1243264 | Seq. ID No. 4728 |
| 2260c | Seq. ID No. 4729 | 1243953 | 1243941 | 1243264 | Seq. ID No. 4730 |
| 2262 | Seq. ID No. 4731 | 1244377 | 1244347 | 1244105 | Seq. ID No. 4732 |
| 2263 | Seq. ID No. 4733 | 1245473 | 1245458 | 1244454 | Seq. ID No. 4734 |
| 2264a | Seq. ID No. 4735 | 1244629 | 1244707 | 1244976 | Seq. ID No. 4736 |
| 2264b | Seq. ID No. 4737 | 1244629 | 1244662 | 1244976 | Seq. ID No. 4738 |
| 2267 | Seq. ID No. 4739 | 1247508 | 1247496 | 1245469 | Seq. ID No. 4740 |
| 2268 | Seq. ID No. 4741 | 1246241 | 1246247 | 1246615 | Seq. ID No. 4742 |
| 2269 | Seq. ID No. 4743 | 1249248 | 1249239 | 1247569 | Seq. ID No. 4744 |
| 2270 | Seq. ID No. 4745 | 1249629 | 1249626 | 1249264 | Seq. ID No. 4746 |
| 2272 | Seq. ID No. 4747 | 1250752 | 1250749 | 1250108 | Seq. ID No. 4748 |
| 2273 | Seq. ID No. 4749 | 1251423 | 1251405 | 1250758 | Seq. ID No. 4750 |
| 2274 | Seq. ID No. 4751 | 1252317 | 1252305 | 1251424 | Seq. ID No. 4752 |
| 2275a | Seq. ID No. 4753 | 1254354 | 1254258 | 1252318 | Seq. ID No. 4754 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 2275b | Seq. ID No. 4755 | 1254354 | 1254339 | 1252318 | Seq. ID No. 4756 |
| 2275c | Seq. ID No. 4757 | 1254354 | 1254354 | 1252318 | Seq. ID No. 4758 |
| 2276a | Seq. ID No. 4759 | 1255081 | 1254802 | 1254299 | Seq. ID No. 4760 |
| 2276b | Seq. ID No. 4761 | 1255081 | 1254958 | 1254299 | Seq. ID No. 4762 |
| 2276c | Seq. ID No. 4763 | 1255081 | 1255066 | 1254299 | Seq. ID No. 4764 |
| 2276d | Seq. ID No. 4765 | 1255081 | 1255075 | 1254299 | Seq. ID No. 4766 |
| 2277a | Seq. ID No. 4767 | 1256478 | 1256451 | 1255072 | Seq. ID No. 4768 |
| 2277b | Seq. ID No. 4769 | 1256478 | 1256463 | 1255072 | Seq. ID No. 4770 |
| 2278a | Seq. ID No. 4771 | 1257418 | 1256983 | 1256438 | Seq. ID No. 4772 |
| 2278b | Seq. ID No. 4773 | 1257418 | 1257376 | 1256438 | Seq. ID No. 4774 |
| 2278c | Seq. ID No. 4775 | 1257418 | 1257394 | 1256438 | Seq. ID No. 4776 |
| 2278d | Seq. ID No. 4777 | 1257418 | 1257403 | 1256438 | Seq. ID No. 4778 |
| 2280 | Seq. ID No. 4779 | 1259834 | 1259834 | 1257408 | Seq. ID No. 4780 |
| 2284 | Seq. ID No. 4781 | 1261069 | 1261063 | 1259858 | Seq. ID No. 4782 |
| 2285 | Seq. ID No. 4783 | 1261477 | 1261465 | 1261241 | Seq. ID No. 4784 |
| 2286a | Seq. ID No. 4785 | 1262148 | 1261971 | 1261465 | Seq. ID No. 4786 |
| 2286b | Seq. ID No. 4787 | 1262148 | 1262130 | 1261465 | Seq. ID No. 4788 |
| 2288 | Seq. ID No. 4789 | 1263490 | 1263487 | 1262135 | Seq. ID No. 4790 |
| 2290 | Seq. ID No. 4791 | 1264398 | 1264398 | 1263730 | Seq. ID No. 4792 |
| 2291a | Seq. ID No. 4793 | 1265817 | 1265784 | 1264405 | Seq. ID No. 4794 |
| 2291b | Seq. ID No. 4795 | 1265817 | 1265799 | 1264405 | Seq. ID No. 4796 |
| 2291c | Seq. ID No. 4797 | 1265817 | 1265811 | 1264405 | Seq. ID No. 4798 |
| 2292a | Seq. ID No. 4799 | 1267633 | 1267510 | 1265777 | Seq. ID No. 4800 |
| 2292b | Seq. ID No. 4801 | 1267633 | 1267570 | 1265777 | Seq. ID No. 4802 |
| 2292c | Seq. ID No. 4803 | 1267633 | 1267573 | 1265777 | Seq. ID No. 4804 |
| 2294 | Seq. ID No. 4805 | 1266308 | 1266353 | 1266808 | Seq. ID No. 4806 |
| 2297 | Seq. ID No. 4807 | 1267892 | 1267889 | 1267578 | Seq. ID No. 4808 |
| 2298 | Seq. ID No. 4809 | 1268895 | 1268883 | 1267879 | Seq. ID No. 4810 |
| 2299 | Seq. ID No. 4811 | 1269489 | 1269483 | 1268896 | Seq. ID No. 4812 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 2300 | Seq. ID No. 4813 | 1270011 | 1269993 | 1269514 | Seq. ID No. 4814 |
| 2301 | Seq. ID No. 4815 | 1271985 | 1271964 | 1270018 | Seq. ID No. 4816 |
| 2302 | Seq. ID No. 4817 | 1269785 | 1269794 | 1270087 | Seq. ID No. 4818 |
| 2303 | Seq. ID No. 4819 | 1270295 | 1270301 | 1270528 | Seq. ID No. 4820 |
| 2304 | Seq. ID No. 4821 | 1272307 | 1272277 | 1271951 | Seq. ID No. 4822 |
| 2306c | Seq. ID No. 4823 | 1272365 | 1272404 | 1272844 | Seq. ID No. 4824 |
| 2307 | Seq. ID No. 4825 | 1273700 | 1273679 | 1272978 | Seq. ID No. 4826 |
| 2308 | Seq. ID No. 4827 | 1274658 | 1274640 | 1273681 | Seq. ID No. 4828 |
| 2309a | Seq. ID No. 4829 | 1275133 | 1274938 | 1274654 | Seq. ID No. 4830 |
| 2309b | Seq. ID No. 4831 | 1275133 | 1274956 | 1274654 | Seq. ID No. 4832 |
| 2309c | Seq. ID No. 4833 | 1275133 | 1275010 | 1274654 | Seq. ID No. 4834 |
| 2310 | Seq. ID No. 4835 | 1275318 | 1275294 | 1275058 | Seq. ID No. 4836 |
| 2311 | Seq. ID No. 4837 | 1276504 | 1276489 | 1275308 | Seq. ID No. 4838 |
| 2312a | Seq. ID No. 4839 | 1278512 | 1278431 | 1276806 | Seq. ID No. 4840 |
| 2312b | Seq. ID No. 4841 | 1278512 | 1278485 | 1276806 | Seq. ID No. 4842 |
| 2312c | Seq. ID No. 4843 | 1278512 | 1278494 | 1276806 | Seq. ID No. 4844 |
| 2314 | Seq. ID No. 4845 | 1278600 | 1278633 | 1279616 | Seq. ID No. 4846 |
| 2315 | Seq. ID No. 4847 | 1279974 | 1279980 | 1280267 | Seq. ID No. 4848 |
| 2316 | Seq. ID No. 4849 | 1282453 | 1282450 | 1280330 | Seq. ID No. 4850 |
| 2317 | Seq. ID No. 4851 | 1280784 | 1280841 | 1281170 | Seq. ID No. 4852 |
| 2320 | Seq. ID No. 4853 | 1282272 | 1282278 | 1282565 | Seq. ID No. 4854 |
| 2321a | Seq. ID No. 4855 | 1282966 | 1282873 | 1282604 | Seq. ID No. 4856 |
| 2321b | Seq. ID No. 4857 | 1282966 | 1282909 | 1282604 | Seq. ID No. 4858 |
| 2321c | Seq. ID No. 4859 | 1282966 | 1282939 | 1282604 | Seq. ID No. 4860 |
| 2322 | Seq. ID No. 4861 | 1285049 | 1285034 | 1283040 | Seq. ID No. 4862 |
| 2324 | Seq. ID No. 4863 | 1283044 | 1283068 | 1283607 | Seq. ID No. 4864 |
| 2327 | Seq. ID No. 4865 | 1285600 | 1285549 | 1285298 | Seq. ID No. 4866 |
| 2328 | Seq. ID No. 4867 | 1286689 | 1286668 | 1285637 | Seq. ID No. 4868 |
| 2329a | Seq. ID No. 4869 | 1289009 | 1287596 | 1286658 | Seq. ID No. 4870 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 2329b | Seq. ID No. 4871 | 1289009 | 1287857 | 1286658 | Seq. ID No. 4872 |
| 2329c | Seq. ID No. 4873 | 1289009 | 1288268 | 1286658 | Seq. ID No. 4874 |
| 2329d | Seq. ID No. 4875 | 1289009 | 1288994 | 1286658 | Seq. ID No. 4876 |
| 2330 | Seq. ID No. 4877 | 1289504 | 1289489 | 1289010 | Seq. ID No. 4878 |
| 2331 | Seq. ID No. 4879 | 1290204 | 1290183 | 1289548 | Seq. ID No. 4880 |
| 2333 | Seq. ID No. 4881 | 1290847 | 1290847 | 1290371 | Seq. ID No. 4882 |
| 2335 | Seq. ID No. 4883 | 1291411 | 1291402 | 1290848 | Seq. ID No. 4884 |
| 2336 | Seq. ID No. 4885 | 1291822 | 1291732 | 1291412 | Seq. ID No. 4886 |
| 2337b | Seq. ID No. 4887 | 1292097 | 1292079 | 1291810 | Seq. ID No. 4888 |
| 2338a | Seq. ID No. 4889 | 1293987 | 1293840 | 1292143 | Seq. ID No. 4890 |
| 2338b | Seq. ID No. 4891 | 1293987 | 1293891 | 1292143 | Seq. ID No. 4892 |
| 2338c | Seq. ID No. 4893 | 1293987 | 1293972 | 1292143 | Seq. ID No. 4894 |
| 2342a | Seq. ID No. 4895 | 1294892 | 1294544 | 1294074 | Seq. ID No. 4896 |
| 2342b | Seq. ID No. 4897 | 1294892 | 1294781 | 1294074 | Seq. ID No. 4898 |
| 2342c | Seq. ID No. 4899 | 1294892 | 1294856 | 1294074 | Seq. ID No. 4900 |
| 2344 | Seq. ID No. 4901 | 1296464 | 1296425 | 1295013 | Seq. ID No. 4902 |
| 2345 | Seq. ID No. 4903 | 1297883 | 1297877 | 1296513 | Seq. ID No. 4904 |
| 2347 | Seq. ID No. 4905 | 1298903 | 1298897 | 1297914 | Seq. ID No. 4906 |
| 2348 | Seq. ID No. 4907 | 1300105 | 1300084 | 1298900 | Seq. ID No. 4908 |
| 2349a | Seq. ID No. 4909 | 1300346 | 1300391 | 1300954 | Seq. ID No. 4910 |
| 2349b | Seq. ID No. 4911 | 1300346 | 1300373 | 1300954 | Seq. ID No. 4912 |
| 2350a | Seq. ID No. 4913 | 1302119 | 1302026 | 1301769 | Seq. ID No. 4914 |
| 2353 | Seq. ID No. 4915 | 1301242 | 1301248 | 1302921 | Seq. ID No. 4916 |
| 2354 | Seq. ID No. 4917 | 1303618 | 1303603 | 1302971 | Seq. ID No. 4918 |
| 2357 | Seq. ID No. 4919 | 1304669 | 1304657 | 1303596 | Seq. ID No. 4920 |
| 2358 | Seq. ID No. 4921 | 1305415 | 1305397 | 1304654 | Seq. ID No. 4922 |
| 2360 | Seq. ID No. 4923 | 1306366 | 1306351 | 1306055 | Seq. ID No. 4924 |
| 2361a | Seq. ID No. 4925 | 1306811 | 1306532 | 1306110 | Seq. ID No. 4926 |
| 2361b | Seq. ID No. 4927 | 1306811 | 1306745 | 1306110 | Seq. ID No. 4928 |

TABLE 2: ALL CLAIMED ORFS

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 2363a | Seq. ID No. 4929 | 1307978 | 1307936 | 1306833 | Seq. ID No. 4930 |
| 2363b | Seq. ID No. 4931 | 1307978 | 1307975 | 1306833 | Seq. ID No. 4932 |
| 2365a | Seq. ID No. 4933 | 1308165 | 1308219 | 1309355 | Seq. ID No. 4934 |
| 2365b | Seq. ID No. 4935 | 1308165 | 1308189 | 1309355 | Seq. ID No. 4936 |
| 2366a | Seq. ID No. 4937 | 1310189 | 1310135 | 1309491 | Seq. ID No. 4938 |
| 2366b | Seq. ID No. 4939 | 1310189 | 1310138 | 1309491 | Seq. ID No. 4940 |
| 2367 | Seq. ID No. 4941 | 1310796 | 1310793 | 1310128 | Seq. ID No. 4942 |
| 2368 | Seq. ID No. 4943 | 1311881 | 1311860 | 1310793 | Seq. ID No. 4944 |
| 2369 | Seq. ID No. 4945 | 1313031 | 1313028 | 1311862 | Seq. ID No. 4946 |
| 2370 | Seq. ID No. 4947 | 1313797 | 1313788 | 1313054 | Seq. ID No. 4948 |
| 2371a | Seq. ID No. 4949 | 1312950 | 1313103 | 1313339 | Seq. ID No. 4950 |
| 2372 | Seq. ID No. 4951 | 1313340 | 1313382 | 1313705 | Seq. ID No. 4952 |
| 2373 | Seq. ID No. 4953 | 1314523 | 1314511 | 1313798 | Seq. ID No. 4954 |
| 2374a | Seq. ID No. 4955 | 1315386 | 1315314 | 1314508 | Seq. ID No. 4956 |
| 2374b | Seq. ID No. 4957 | 1315386 | 1315377 | 1314508 | Seq. ID No. 4958 |
| 2376 | Seq. ID No. 4959 | 1316374 | 1316374 | 1315394 | Seq. ID No. 4960 |
| 2377a | Seq. ID No. 4961 | 1317653 | 1317590 | 1316367 | Seq. ID No. 4962 |
| 2377b | Seq. ID No. 4963 | 1317653 | 1317650 | 1316367 | Seq. ID No. 4964 |
| 2378 | Seq. ID No. 4965 | 1318340 | 1318334 | 1318038 | Seq. ID No. 4966 |
| 2379a | Seq. ID No. 4967 | 1318807 | 1318741 | 1318331 | Seq. ID No. 4968 |
| 2379b | Seq. ID No. 4969 | 1318807 | 1318750 | 1318331 | Seq. ID No. 4970 |
| 2380 | Seq. ID No. 4971 | 1319037 | 1319019 | 1318747 | Seq. ID No. 4972 |
| 2381 | Seq. ID No. 4973 | 1320232 | 1320205 | 1319264 | Seq. ID No. 4974 |
| 2382c | Seq. ID No. 4975 | 1319889 | 1319790 | 1319509 | Seq. ID No. 4976 |
| 2384a | Seq. ID No. 4977 | 1322997 | 1322961 | 1320310 | Seq. ID No. 4978 |
| 2384b | Seq. ID No. 4979 | 1322997 | 1322982 | 1320310 | Seq. ID No. 4980 |
| 2386b | Seq. ID No. 4981 | 1322660 | 1322696 | 1323103 | Seq. ID No. 4982 |
| 2386c | Seq. ID No. 4983 | 1322660 | 1322675 | 1323103 | Seq. ID No. 4984 |
| 2387 | Seq. ID No. 4985 | 1324321 | 1324225 | 1323305 | Seq. ID No. 4986 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 2390 | Seq. ID No. 4987 | 1324802 | 1324754 | 1324458 | Seq. ID No. 4988 |
| 2391 | Seq. ID No. 4989 | 1324273 | 1324294 | 1325208 | Seq. ID No. 4990 |
| 2392 | Seq. ID No. 4991 | 1327683 | 1327665 | 1325251 | Seq. ID No. 4992 |
| 2394 | Seq. ID No. 4993 | 1325873 | 1325882 | 1326148 | Seq. ID No. 4994 |
| 2395 | Seq. ID No. 4995 | 1328666 | 1328639 | 1327779 | Seq. ID No. 4996 |
| 2396 | Seq. ID No. 4997 | 1329927 | 1329906 | 1328779 | Seq. ID No. 4998 |
| 2397 | Seq. ID No. 4999 | 1328731 | 1328752 | 1329045 | Seq. ID No. 5000 |
| 2398 | Seq. ID No. 5001 | 1330390 | 1330381 | 1330037 | Seq. ID No. 5002 |
| 2399a | Seq. ID No. 5003 | 1331563 | 1331224 | 1330391 | Seq. ID No. 5004 |
| 2399b | Seq. ID No. 5005 | 1331563 | 1331488 | 1330391 | Seq. ID No. 5006 |
| 2399c | Seq. ID No. 5007 | 1331563 | 1331542 | 1330391 | Seq. ID No. 5008 |
| 2401 | Seq. ID No. 5009 | 1333918 | 1333894 | 1331564 | Seq. ID No. 5010 |
| 2402a | Seq. ID No. 5011 | 1334374 | 1334266 | 1334003 | Seq. ID No. 5012 |
| 2402b | Seq. ID No. 5013 | 1334374 | 1334305 | 1334003 | Seq. ID No. 5014 |
| 2403a | Seq. ID No. 5015 | 1333974 | 1334010 | 1335254 | Seq. ID No. 5016 |
| 2403b | Seq. ID No. 5017 | 1333974 | 1333986 | 1335254 | Seq. ID No. 5018 |
| 2404a | Seq. ID No. 5019 | 1337114 | 1336970 | 1335393 | Seq. ID No. 5020 |
| 2404b | Seq. ID No. 5021 | 1337114 | 1337108 | 1335393 | Seq. ID No. 5022 |
| 2407a | Seq. ID No. 5023 | 1336219 | 1336225 | 1336524 | Seq. ID No. 5024 |
| 2409a | Seq. ID No. 5025 | 1337582 | 1337615 | 1338046 | Seq. ID No. 5026 |
| 2409b | Seq. ID No. 5027 | 1337582 | 1337606 | 1338046 | Seq. ID No. 5028 |
| 2410 | Seq. ID No. 5029 | 1339429 | 1339369 | 1338176 | Seq. ID No. 5030 |
| 2412 | Seq. ID No. 5031 | 1339044 | 1339017 | 1338787 | Seq. ID No. 5032 |
| 2413a | Seq. ID No. 5033 | 1338351 | 1338411 | 1338818 | Seq. ID No. 5034 |
| 2413b | Seq. ID No. 5035 | 1338351 | 1338357 | 1338818 | Seq. ID No. 5036 |
| 2415a | Seq. ID No. 5037 | 1339712 | 1339586 | 1339392 | Seq. ID No. 5038 |
| 2415b | Seq. ID No. 5039 | 1339712 | 1339688 | 1339392 | Seq. ID No. 5040 |
| 2416b | Seq. ID No. 5041 | 1338897 | 1338969 | 1339433 | Seq. ID No. 5042 |
| 2416c | Seq. ID No. 5043 | 1338897 | 1338915 | 1339433 | Seq. ID No. 5044 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 2417a | Seq. ID No. 5045 | 1340413 | 1340371 | 1339583 | Seq. ID No. 5046 |
| 2417b | Seq. ID No. 5047 | 1340413 | 1340398 | 1339583 | Seq. ID No. 5048 |
| 2418a | Seq. ID No. 5049 | 1340847 | 1340808 | 1340524 | Seq. ID No. 5050 |
| 2418b | Seq. ID No. 5051 | 1340847 | 1340817 | 1340524 | Seq. ID No. 5052 |
| 2420 | Seq. ID No. 5053 | 1341166 | 1341157 | 1340795 | Seq. ID No. 5054 |
| 2421 | Seq. ID No. 5055 | 1341520 | 1341478 | 1341170 | Seq. ID No. 5056 |
| 2422b | Seq. ID No. 5057 | 1342395 | 1342347 | 1341700 | Seq. ID No. 5058 |
| 2422c | Seq. ID No. 5059 | 1342395 | 1342395 | 1341700 | Seq. ID No. 5060 |
| 2423a | Seq. ID No. 5061 | 1343009 | 1342928 | 1342413 | Seq. ID No. 5062 |
| 2423b | Seq. ID No. 5063 | 1343009 | 1342994 | 1342413 | Seq. ID No. 5064 |
| 2424a | Seq. ID No. 5065 | 1343829 | 1343793 | 1342930 | Seq. ID No. 5066 |
| 2424b | Seq. ID No. 5067 | 1343829 | 1343799 | 1342930 | Seq. ID No. 5068 |
| 2424c | Seq. ID No. 5069 | 1343829 | 1343817 | 1342930 | Seq. ID No. 5070 |
| 2426 | Seq. ID No. 5071 | 1344336 | 1344336 | 1344130 | Seq. ID No. 5072 |
| 2428a | Seq. ID No. 5073 | 1344573 | 1344774 | 1345985 | Seq. ID No. 5074 |
| 2428b | Seq. ID No. 5075 | 1344573 | 1344648 | 1345985 | Seq. ID No. 5076 |
| 2428c | Seq. ID No. 5077 | 1344573 | 1344579 | 1345985 | Seq. ID No. 5078 |
| 2429 | Seq. ID No. 5079 | 1346793 | 1346718 | 1346035 | Seq. ID No. 5080 |
| 2432 | Seq. ID No. 5081 | 1347442 | 1347430 | 1346780 | Seq. ID No. 5082 |
| 2433 | Seq. ID No. 5083 | 1350107 | 1350095 | 1347432 | Seq. ID No. 5084 |
| 2434 | Seq. ID No. 5085 | 1347436 | 1347457 | 1347729 | Seq. ID No. 5086 |
| 2440 | Seq. ID No. 5087 | 1351640 | 1351607 | 1350387 | Seq. ID No. 5088 |
| 2442a | Seq. ID No. 5089 | 1352776 | 1352596 | 1351619 | Seq. ID No. 5090 |
| 2442b | Seq. ID No. 5091 | 1352776 | 1352761 | 1351619 | Seq. ID No. 5092 |
| 2443 | Seq. ID No. 5093 | 1353214 | 1353199 | 1352876 | Seq. ID No. 5094 |
| 2444a | Seq. ID No. 5095 | 1354016 | 1353962 | 1353192 | Seq. ID No. 5096 |
| 2444b | Seq. ID No. 5097 | 1354016 | 1353977 | 1353192 | Seq. ID No. 5098 |
| 2444c | Seq. ID No. 5099 | 1354016 | 1354001 | 1353192 | Seq. ID No. 5100 |
| 2444d | Seq. ID No. 5101 | 1354016 | 1354007 | 1353192 | Seq. ID No. 5102 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 2445 | Seq. ID No. 5103 | 1354599 | 1354581 | 1353931 | Seq. ID No. 5104 |
| 2448b | Seq. ID No. 5105 | 1354686 | 1354710 | 1355162 | Seq. ID No. 5106 |
| 2449a | Seq. ID No. 5107 | 1355925 | 1355691 | 1355272 | Seq. ID No. 5108 |
| 2449b | Seq. ID No. 5109 | 1355925 | 1355877 | 1355272 | Seq. ID No. 5110 |
| 2451 | Seq. ID No. 5111 | 1356746 | 1356734 | 1356105 | Seq. ID No. 5112 |
| 2452 | Seq. ID No. 5113 | 1356996 | 1357029 | 1358138 | Seq. ID No. 5114 |
| 2453 | Seq. ID No. 5115 | 1359295 | 1359286 | 1358234 | Seq. ID No. 5116 |
| 2455 | Seq. ID No. 5117 | 1360072 | 1360054 | 1359296 | Seq. ID No. 5118 |
| 2456a | Seq. ID No. 5119 | 1361028 | 1360605 | 1360051 | Seq. ID No. 5120 |
| 2456b | Seq. ID No. 5121 | 1361028 | 1360677 | 1360051 | Seq. ID No. 5122 |
| 2456c | Seq. ID No. 5123 | 1361028 | 1360941 | 1360051 | Seq. ID No. 5124 |
| 2456d | Seq. ID No. 5125 | 1361028 | 1361013 | 1360051 | Seq. ID No. 5126 |
| 2456e | Seq. ID No. 5127 | 1361028 | 1361025 | 1360051 | Seq. ID No. 5128 |
| 2458a | Seq. ID No. 5129 | 1362001 | 1361608 | 1361003 | Seq. ID No. 5130 |
| 2458b | Seq. ID No. 5131 | 1362001 | 1361680 | 1361003 | Seq. ID No. 5132 |
| 2458c | Seq. ID No. 5133 | 1362001 | 1361764 | 1361003 | Seq. ID No. 5134 |
| 2458d | Seq. ID No. 5135 | 1362001 | 1361767 | 1361003 | Seq. ID No. 5136 |
| 2458e | Seq. ID No. 5137 | 1362001 | 1361854 | 1361003 | Seq. ID No. 5138 |
| 2458f | Seq. ID No. 5139 | 1362001 | 1361983 | 1361003 | Seq. ID No. 5140 |
| 2458g | Seq. ID No. 5141 | 1362001 | 1361986 | 1361003 | Seq. ID No. 5142 |
| 2461a | Seq. ID No. 5143 | 1363565 | 1363550 | 1362201 | Seq. ID No. 5144 |
| 2461b | Seq. ID No. 5145 | 1363565 | 1363556 | 1362201 | Seq. ID No. 5146 |
| 2462a | Seq. ID No. 5147 | 1364408 | 1364270 | 1363584 | Seq. ID No. 5148 |
| 2462b | Seq. ID No. 5149 | 1364408 | 1364294 | 1363584 | Seq. ID No. 5150 |
| 2463a | Seq. ID No. 5151 | 1363279 | 1363366 | 1363731 | Seq. ID No. 5152 |
| 2464 | Seq. ID No. 5153 | 1364536 | 1364536 | 1364309 | Seq. ID No. 5154 |
| 2465a | Seq. ID No. 5155 | 1365094 | 1365082 | 1364537 | Seq. ID No. 5156 |
| 2465b | Seq. ID No. 5157 | 1365094 | 1365094 | 1364537 | Seq. ID No. 5158 |
| 2468a | Seq. ID No. 5159 | 1365781 | 1365751 | 1365422 | Seq. ID No. 5160 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 2468b | Seq. ID No. 5161 | 1365781 | 1365775 | 1365422 | Seq. ID No. 5162 |
| 2469a | Seq. ID No. 5163 | 1365183 | 1365474 | 1365908 | Seq. ID No. 5164 |
| 2469b | Seq. ID No. 5165 | 1365183 | 1365204 | 1365908 | Seq. ID No. 5166 |
| 2470 | Seq. ID No. 5167 | 1367011 | 1367011 | 1366664 | Seq. ID No. 5168 |
| 2471 | Seq. ID No. 5169 | 1365926 | 1365932 | 1366858 | Seq. ID No. 5170 |
| 2473 | Seq. ID No. 5171 | 1366716 | 1366872 | 1367141 | Seq. ID No. 5172 |
| 2474a | Seq. ID No. 5173 | 1367135 | 1367240 | 1367476 | Seq. ID No. 5174 |
| 2474b | Seq. ID No. 5175 | 1367135 | 1367189 | 1367476 | Seq. ID No. 5176 |
| 2474c | Seq. ID No. 5177 | 1367135 | 1367135 | 1367476 | Seq. ID No. 5178 |
| 2475a | Seq. ID No. 5179 | 1370572 | 1370467 | 1367687 | Seq. ID No. 5180 |
| 2475b | Seq. ID No. 5181 | 1370572 | 1370503 | 1367687 | Seq. ID No. 5182 |
| 2475c | Seq. ID No. 5183 | 1370572 | 1370509 | 1367687 | Seq. ID No. 5184 |
| 2477 | Seq. ID No. 5185 | 1371542 | 1371515 | 1370790 | Seq. ID No. 5186 |
| 2480 | Seq. ID No. 5187 | 1372374 | 1372365 | 1371577 | Seq. ID No. 5188 |
| 2481a | Seq. ID No. 5189 | 1371566 | 1371596 | 1372078 | Seq. ID No. 5190 |
| 2481b | Seq. ID No. 5191 | 1371566 | 1371569 | 1372078 | Seq. ID No. 5192 |
| 2482 | Seq. ID No. 5193 | 1372662 | 1372662 | 1372375 | Seq. ID No. 5194 |
| 2483 | Seq. ID No. 5195 | 1373156 | 1373144 | 1372683 | Seq. ID No. 5196 |
| 2484a | Seq. ID No. 5197 | 1373586 | 1373568 | 1373149 | Seq. ID No. 5198 |
| 2484b | Seq. ID No. 5199 | 1373586 | 1373580 | 1373149 | Seq. ID No. 5200 |
| 2485 | Seq. ID No. 5201 | 1374427 | 1374400 | 1373168 | Seq. ID No. 5202 |
| 2489 | Seq. ID No. 5203 | 1375804 | 1375792 | 1374428 | Seq. ID No. 5204 |
| 2490 | Seq. ID No. 5205 | 1376880 | 1376880 | 1375942 | Seq. ID No. 5206 |
| 2492a | Seq. ID No. 5207 | 1378075 | 1377256 | 1376897 | Seq. ID No. 5208 |
| 2492b | Seq. ID No. 5209 | 1378075 | 1378060 | 1376897 | Seq. ID No. 5210 |
| 2494 | Seq. ID No. 5211 | 1379477 | 1379453 | 1378050 | Seq. ID No. 5212 |
| 2495a | Seq. ID No. 5213 | 1380488 | 1380320 | 1379526 | Seq. ID No. 5214 |
| 2495b | Seq. ID No. 5215 | 1380488 | 1380479 | 1379526 | Seq. ID No. 5216 |
| 2497a | Seq. ID No. 5217 | 1382929 | 1382839 | 1380632 | Seq. ID No. 5218 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 2497b | Seq. ID No. 5219 | 1382929 | 1382926 | 1380632 | Seq. ID No. 5220 |
| 2498b | Seq. ID No. 5221 | 1380214 | 1380247 | 1380741 | Seq. ID No. 5222 |
| 2500a | Seq. ID No. 5223 | 1383330 | 1383216 | 1382926 | Seq. ID No. 5224 |
| 2500b | Seq. ID No. 5225 | 1383330 | 1383318 | 1382926 | Seq. ID No. 5226 |
| 2500c | Seq. ID No. 5227 | 1383330 | 1383327 | 1382926 | Seq. ID No. 5228 |
| 2501a | Seq. ID No. 5229 | 1384292 | 1384196 | 1383324 | Seq. ID No. 5230 |
| 2501b | Seq. ID No. 5231 | 1384292 | 1384280 | 1383324 | Seq. ID No. 5232 |
| 2504a | Seq. ID No. 5233 | 1384748 | 1384718 | 1384293 | Seq. ID No. 5234 |
| 2504b | Seq. ID No. 5235 | 1384748 | 1384724 | 1384293 | Seq. ID No. 5236 |
| 2505 | Seq. ID No. 5237 | 1385365 | 1385353 | 1384976 | Seq. ID No. 5238 |
| 2506 | Seq. ID No. 5239 | 1386567 | 1386534 | 1385977 | Seq. ID No. 5240 |
| 2507b | Seq. ID No. 5241 | 1387792 | 1387783 | 1386590 | Seq. ID No. 5242 |
| 2507c | Seq. ID No. 5243 | 1387792 | 1387792 | 1386590 | Seq. ID No. 5244 |
| 2510 | Seq. ID No. 5245 | 1388536 | 1388533 | 1387814 | Seq. ID No. 5246 |
| 2512c | Seq. ID No. 5247 | 1388904 | 1388901 | 1388533 | Seq. ID No. 5248 |
| 2513a | Seq. ID No. 5249 | 1389534 | 1389486 | 1388905 | Seq. ID No. 5250 |
| 2513b | Seq. ID No. 5251 | 1389534 | 1389516 | 1388905 | Seq. ID No. 5252 |
| 2513c | Seq. ID No. 5253 | 1389534 | 1389525 | 1388905 | Seq. ID No. 5254 |
| 2514 | Seq. ID No. 5255 | 1390141 | 1390135 | 1389491 | Seq. ID No. 5256 |
| 2515 | Seq. ID No. 5257 | 1390451 | 1390451 | 1390137 | Seq. ID No. 5258 |
| 2516a | Seq. ID No. 5259 | 1391642 | 1391396 | 1390482 | Seq. ID No. 5260 |
| 2516b | Seq. ID No. 5261 | 1391642 | 1391627 | 1390482 | Seq. ID No. 5262 |
| 2517a | Seq. ID No. 5263 | 1392251 | 1392185 | 1391643 | Seq. ID No. 5264 |
| 2517b | Seq. ID No. 5265 | 1392251 | 1392248 | 1391643 | Seq. ID No. 5266 |
| 2518a | Seq. ID No. 5267 | 1391575 | 1391770 | 1392045 | Seq. ID No. 5268 |
| 2519a | Seq. ID No. 5269 | 1392498 | 1392462 | 1392199 | Seq. ID No. 5270 |
| 2519b | Seq. ID No. 5271 | 1392498 | 1392492 | 1392199 | Seq. ID No. 5272 |
| 2520a | Seq. ID No. 5273 | 1394487 | 1394379 | 1392658 | Seq. ID No. 5274 |
| 2520b | Seq. ID No. 5275 | 1394487 | 1394400 | 1392658 | Seq. ID No. 5276 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 2520c | Seq. ID No. 5277 | 1394487 | 1394469 | 1392658 | Seq. ID No. 5278 |
| 2520d | Seq. ID No. 5279 | 1394487 | 1394487 | 1392658 | Seq. ID No. 5280 |
| 2521 | Seq. ID No. 5281 | 1393493 | 1393499 | 1393756 | Seq. ID No. 5282 |
| 2523 | Seq. ID No. 5283 | 1394650 | 1394647 | 1394381 | Seq. ID No. 5284 |
| 2525a | Seq. ID No. 5285 | 1396526 | 1396475 | 1396092 | Seq. ID No. 5286 |
| 2525b | Seq. ID No. 5287 | 1396526 | 1396490 | 1396092 | Seq. ID No. 5288 |
| 2527a | Seq. ID No. 5289 | 1394878 | 1395148 | 1397184 | Seq. ID No. 5290 |
| 2527b | Seq. ID No. 5291 | 1394878 | 1394953 | 1397184 | Seq. ID No. 5292 |
| 2528a | Seq. ID No. 5293 | 1399138 | 1398754 | 1397267 | Seq. ID No. 5294 |
| 2528b | Seq. ID No. 5295 | 1399138 | 1398850 | 1397267 | Seq. ID No. 5296 |
| 2528c | Seq. ID No. 5297 | 1399138 | 1398922 | 1397267 | Seq. ID No. 5298 |
| 2528d | Seq. ID No. 5299 | 1399138 | 1398961 | 1397267 | Seq. ID No. 5300 |
| 2532b | Seq. ID No. 5301 | 1397745 | 1397808 | 1398275 | Seq. ID No. 5302 |
| 2532c | Seq. ID No. 5303 | 1397745 | 1397772 | 1398275 | Seq. ID No. 5304 |
| 2534 | Seq. ID No. 5305 | 1399875 | 1399866 | 1398979 | Seq. ID No. 5306 |
| 2535a | Seq. ID No. 5307 | 1400680 | 1400668 | 1399847 | Seq. ID No. 5308 |
| 2535b | Seq. ID No. 5309 | 1400680 | 1400674 | 1399847 | Seq. ID No. 5310 |
| 2538 | Seq. ID No. 5311 | 1401349 | 1401310 | 1400681 | Seq. ID No. 5312 |
| 2541 | Seq. ID No. 5313 | 1401366 | 1401387 | 1401971 | Seq. ID No. 5314 |
| 2542a | Seq. ID No. 5315 | 1402014 | 1402296 | 1402676 | Seq. ID No. 5316 |
| 2542b | Seq. ID No. 5317 | 1402014 | 1402077 | 1402676 | Seq. ID No. 5318 |
| 2542c | Seq. ID No. 5319 | 1402014 | 1402062 | 1402676 | Seq. ID No. 5320 |
| 2543 | Seq. ID No. 5321 | 1403760 | 1403730 | 1403266 | Seq. ID No. 5322 |
| 2544 | Seq. ID No. 5323 | 1403203 | 1403254 | 1404255 | Seq. ID No. 5324 |
| 2545 | Seq. ID No. 5325 | 1404256 | 1404304 | 1404855 | Seq. ID No. 5326 |
| 2546 | Seq. ID No. 5327 | 1405305 | 1405302 | 1405021 | Seq. ID No. 5328 |
| 2547b | Seq. ID No. 5329 | 1406040 | 1406031 | 1405459 | Seq. ID No. 5330 |
| 2547c | Seq. ID No. 5331 | 1406040 | 1406037 | 1405459 | Seq. ID No. 5332 |
| 2548a | Seq. ID No. 5333 | 1404971 | 1405037 | 1405978 | Seq. ID No. 5334 |

TABLE 2: ALL CLAIMED ORFS

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 2548b | Seq. ID No. 5335 | 1404971 | 1404995 | 1405978 | Seq. ID No. 5336 |
| 2549 | Seq. ID No. 5337 | 1405979 | 1405988 | 1406572 | Seq. ID No. 5338 |
| 2550b | Seq. ID No. 5339 | 1406454 | 1406559 | 1406936 | Seq. ID No. 5340 |
| 2550c | Seq. ID No. 5341 | 1406454 | 1406538 | 1406936 | Seq. ID No. 5342 |
| 2550e | Seq. ID No. 5343 | 1406454 | 1406469 | 1406936 | Seq. ID No. 5344 |
| 2552 | Seq. ID No. 5345 | 1407012 | 1407042 | 1408169 | Seq. ID No. 5346 |
| 2553 | Seq. ID No. 5347 | 1408922 | 1408922 | 1408764 | Seq. ID No. 5348 |
| 2554a | Seq. ID No. 5349 | 1410070 | 1410022 | 1409012 | Seq. ID No. 5350 |
| 2554b | Seq. ID No. 5351 | 1410070 | 1410031 | 1409012 | Seq. ID No. 5352 |
| 2555a | Seq. ID No. 5353 | 1410981 | 1410666 | 1410037 | Seq. ID No. 5354 |
| 2555b | Seq. ID No. 5355 | 1410981 | 1410930 | 1410037 | Seq. ID No. 5356 |
| 2555c | Seq. ID No. 5357 | 1410981 | 1410954 | 1410037 | Seq. ID No. 5358 |
| 2555d | Seq. ID No. 5359 | 1410981 | 1410960 | 1410037 | Seq. ID No. 5360 |
| 2558a | Seq. ID No. 5361 | 1411225 | 1411165 | 1410899 | Seq. ID No. 5362 |
| 2558b | Seq. ID No. 5363 | 1411225 | 1411183 | 1410899 | Seq. ID No. 5364 |
| 2559 | Seq. ID No. 5365 | 1411808 | 1411841 | 1413085 | Seq. ID No. 5366 |
| 2561 | Seq. ID No. 5367 | 1413552 | 1413567 | 1414415 | Seq. ID No. 5368 |
| 2562a | Seq. ID No. 5369 | 1414348 | 1414450 | 1414695 | Seq. ID No. 5370 |
| 2562c | Seq. ID No. 5371 | 1414348 | 1414396 | 1414695 | Seq. ID No. 5372 |
| 2563 | Seq. ID No. 5373 | 1416663 | 1416645 | 1414831 | Seq. ID No. 5374 |
| 2564a | Seq. ID No. 5375 | 1417575 | 1417422 | 1416748 | Seq. ID No. 5376 |
| 2564b | Seq. ID No. 5377 | 1417575 | 1417524 | 1416748 | Seq. ID No. 5378 |
| 2564c | Seq. ID No. 5379 | 1417575 | 1417533 | 1416748 | Seq. ID No. 5380 |
| 2564d | Seq. ID No. 5381 | 1417575 | 1417569 | 1416748 | Seq. ID No. 5382 |
| 2566 | Seq. ID No. 5383 | 1418729 | 1418708 | 1417590 | Seq. ID No. 5384 |
| 2567a | Seq. ID No. 5385 | 1419622 | 1419307 | 1418843 | Seq. ID No. 5386 |
| 2567b | Seq. ID No. 5387 | 1419622 | 1419610 | 1418843 | Seq. ID No. 5388 |
| 2568 | Seq. ID No. 5389 | 1420782 | 1420740 | 1419607 | Seq. ID No. 5390 |
| 2572 | Seq. ID No. 5391 | 1421908 | 1421875 | 1420760 | Seq. ID No. 5392 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 2573 | Seq. ID No. 5393 | 1422663 | 1422660 | 1421995 | Seq. ID No. 5394 |
| 2575 | Seq. ID No. 5395 | 1423311 | 1423263 | 1422889 | Seq. ID No. 5396 |
| 2576 | Seq. ID No. 5397 | 1424366 | 1424318 | 1423299 | Seq. ID No. 5398 |
| 2578 | Seq. ID No. 5399 | 1424941 | 1424926 | 1424564 | Seq. ID No. 5400 |
| 2579b | Seq. ID No. 5401 | 1425765 | 1425729 | 1425178 | Seq. ID No. 5402 |
| 2581 | Seq. ID No. 5403 | 1426786 | 1426756 | 1425986 | Seq. ID No. 5404 |
| 2582a | Seq. ID No. 5405 | 1427718 | 1427607 | 1426879 | Seq. ID No. 5406 |
| 2582b | Seq. ID No. 5407 | 1427718 | 1427694 | 1426879 | Seq. ID No. 5408 |
| 2582c | Seq. ID No. 5409 | 1427718 | 1427712 | 1426879 | Seq. ID No. 5410 |
| 2585 | Seq. ID No. 5411 | 1429438 | 1429423 | 1427699 | Seq. ID No. 5412 |
| 2587a | Seq. ID No. 5413 | 1429982 | 1429652 | 1429425 | Seq. ID No. 5414 |
| 2587b | Seq. ID No. 5415 | 1429982 | 1429982 | 1429425 | Seq. ID No. 5416 |
| 2588 | Seq. ID No. 5417 | 1430858 | 1430852 | 1429983 | Seq. ID No. 5418 |
| 2589 | Seq. ID No. 5419 | 1433411 | 1433399 | 1431450 | Seq. ID No. 5420 |
| 2591 | Seq. ID No. 5421 | 1434679 | 1434667 | 1433714 | Seq. ID No. 5422 |
| 2592 | Seq. ID No. 5423 | 1435611 | 1435470 | 1434667 | Seq. ID No. 5424 |
| 2593a | Seq. ID No. 5425 | 1436075 | 1435949 | 1435482 | Seq. ID No. 5426 |
| 2593b | Seq. ID No. 5427 | 1436075 | 1436042 | 1435482 | Seq. ID No. 5428 |
| 2594a | Seq. ID No. 5429 | 1436529 | 1436517 | 1436059 | Seq. ID No. 5430 |
| 2594b | Seq. ID No. 5431 | 1436529 | 1436526 | 1436059 | Seq. ID No. 5432 |
| 2596 | Seq. ID No. 5433 | 1437374 | 1437374 | 1436709 | Seq. ID No. 5434 |
| 2597a | Seq. ID No. 5435 | 1438188 | 1437930 | 1437334 | Seq. ID No. 5436 |
| 2597b | Seq. ID No. 5437 | 1438188 | 1438107 | 1437334 | Seq. ID No. 5438 |
| 2597c | Seq. ID No. 5439 | 1438188 | 1438158 | 1437334 | Seq. ID No. 5440 |
| 2598 | Seq. ID No. 5441 | 1440874 | 1440859 | 1438196 | Seq. ID No. 5442 |
| 2602 | Seq. ID No. 5443 | 1442399 | 1442396 | 1441065 | Seq. ID No. 5444 |
| 2605a | Seq. ID No. 5445 | 1442989 | 1442629 | 1442468 | Seq. ID No. 5446 |
| 2605b | Seq. ID No. 5447 | 1442989 | 1442968 | 1442468 | Seq. ID No. 5448 |
| 2606 | Seq. ID No. 5449 | 1443636 | 1443591 | 1442983 | Seq. ID No. 5450 |

TABLE 2: ALL CLAIMED ORFS

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 2608 | Seq. ID No. 5451 | 1444685 | 1444676 | 1443603 | Seq. ID No. 5452 |
| 2610 | Seq. ID No. 5453 | 1444840 | 1444840 | 1445172 | Seq. ID No. 5454 |
| 2611 | Seq. ID No. 5455 | 1445942 | 1445927 | 1445280 | Seq. ID No. 5456 |
| 2613 | Seq. ID No. 5457 | 1446810 | 1446789 | 1445992 | Seq. ID No. 5458 |
| 2616a | Seq. ID No. 5459 | 1448123 | 1447217 | 1446882 | Seq. ID No. 5460 |
| 2616b | Seq. ID No. 5461 | 1448123 | 1447583 | 1446882 | Seq. ID No. 5462 |
| 2616c | Seq. ID No. 5463 | 1448123 | 1447613 | 1446882 | Seq. ID No. 5464 |
| 2616d | Seq. ID No. 5465 | 1448123 | 1447805 | 1446882 | Seq. ID No. 5466 |
| 2616e | Seq. ID No. 5467 | 1448123 | 1447850 | 1446882 | Seq. ID No. 5468 |
| 2616f | Seq. ID No. 5469 | 1448123 | 1447976 | 1446882 | Seq. ID No. 5470 |
| 2616g | Seq. ID No. 5471 | 1448123 | 1448084 | 1446882 | Seq. ID No. 5472 |
| 2616h | Seq. ID No. 5473 | 1448123 | 1448093 | 1446882 | Seq. ID No. 5474 |
| 2617a | Seq. ID No. 5475 | 1448922 | 1448838 | 1448077 | Seq. ID No. 5476 |
| 2617b | Seq. ID No. 5477 | 1448922 | 1448922 | 1448077 | Seq. ID No. 5478 |
| 2618a | Seq. ID No. 5479 | 1448201 | 1448282 | 1448533 | Seq. ID No. 5480 |
| 2618b | Seq. ID No. 5481 | 1448201 | 1448249 | 1448533 | Seq. ID No. 5482 |
| 2619 | Seq. ID No. 5483 | 1448954 | 1448987 | 1449424 | Seq. ID No. 5484 |
| 2620 | Seq. ID No. 5485 | 1449683 | 1449668 | 1449456 | Seq. ID No. 5486 |
| 2621a | Seq. ID No. 5487 | 1449261 | 1449426 | 1449758 | Seq. ID No. 5488 |
| 2623a | Seq. ID No. 5489 | 1451028 | 1450824 | 1449895 | Seq. ID No. 5490 |
| 2623b | Seq. ID No. 5491 | 1451028 | 1451010 | 1449895 | Seq. ID No. 5492 |
| 2624a | Seq. ID No. 5493 | 1452149 | 1452101 | 1451130 | Seq. ID No. 5494 |
| 2624b | Seq. ID No. 5495 | 1452149 | 1452110 | 1451130 | Seq. ID No. 5496 |
| 2625a | Seq. ID No. 5497 | 1454863 | 1453486 | 1452116 | Seq. ID No. 5498 |
| 2625b | Seq. ID No. 5499 | 1454863 | 1454809 | 1452116 | Seq. ID No. 5500 |
| 2626a | Seq. ID No. 5501 | 1456055 | 1455935 | 1454820 | Seq. ID No. 5502 |
| 2626b | Seq. ID No. 5503 | 1456055 | 1455998 | 1454820 | Seq. ID No. 5504 |
| 2627a | Seq. ID No. 5505 | 1456504 | 1456453 | 1456079 | Seq. ID No. 5506 |
| 2627b | Seq. ID No. 5507 | 1456504 | 1456465 | 1456079 | Seq. ID No. 5508 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 2628 | Seq. ID No. 5509 | 1457511 | 1457484 | 1456576 | Seq. ID No. 5510 |
| 2629a | Seq. ID No. 5511 | 1459560 | 1459494 | 1457665 | Seq. ID No. 5512 |
| 2629b | Seq. ID No. 5513 | 1459560 | 1459539 | 1457665 | Seq. ID No. 5514 |
| 2631 | Seq. ID No. 5515 | 1458482 | 1458482 | 1458249 | Seq. ID No. 5516 |
| 2632 | Seq. ID No. 5517 | 1459307 | 1459322 | 1459567 | Seq. ID No. 5518 |
| 2633a | Seq. ID No. 5519 | 1461946 | 1461220 | 1459916 | Seq. ID No. 5520 |
| 2633b | Seq. ID No. 5521 | 1461946 | 1461544 | 1459916 | Seq. ID No. 5522 |
| 2633c | Seq. ID No. 5523 | 1461946 | 1461727 | 1459916 | Seq. ID No. 5524 |
| 2633d | Seq. ID No. 5525 | 1461946 | 1461778 | 1459916 | Seq. ID No. 5526 |
| 2633e | Seq. ID No. 5527 | 1461946 | 1461904 | 1459916 | Seq. ID No. 5528 |
| 2637a | Seq. ID No. 5529 | 1463997 | 1463967 | 1462111 | Seq. ID No. 5530 |
| 2637b | Seq. ID No. 5531 | 1463997 | 1463991 | 1462111 | Seq. ID No. 5532 |
| 2642 | Seq. ID No. 5533 | 1463789 | 1463825 | 1464121 | Seq. ID No. 5534 |
| 2643a | Seq. ID No. 5535 | 1466534 | 1466318 | 1464372 | Seq. ID No. 5536 |
| 2643b | Seq. ID No. 5537 | 1466534 | 1466522 | 1464372 | Seq. ID No. 5538 |
| 2645 | Seq. ID No. 5539 | 1467800 | 1467782 | 1466751 | Seq. ID No. 5540 |
| 2647 | Seq. ID No. 5541 | 1468855 | 1468774 | 1467806 | Seq. ID No. 5542 |
| 2648a | Seq. ID No. 5543 | 1468422 | 1468452 | 1468748 | Seq. ID No. 5544 |
| 2648b | Seq. ID No. 5545 | 1468422 | 1468449 | 1468748 | Seq. ID No. 5546 |
| 2649 | Seq. ID No. 5547 | 1470087 | 1470087 | 1468786 | Seq. ID No. 5548 |
| 2650 | Seq. ID No. 5549 | 1468988 | 1468994 | 1469452 | Seq. ID No. 5550 |
| 2652a | Seq. ID No. 5551 | 1471356 | 1471212 | 1470088 | Seq. ID No. 5552 |
| 2652b | Seq. ID No. 5553 | 1471356 | 1471272 | 1470088 | Seq. ID No. 5554 |
| 2655a | Seq. ID No. 5555 | 1471693 | 1471618 | 1471307 | Seq. ID No. 5556 |
| 2655b | Seq. ID No. 5557 | 1471693 | 1471666 | 1471307 | Seq. ID No. 5558 |
| 2656 | Seq. ID No. 5559 | 1472777 | 1472771 | 1471758 | Seq. ID No. 5560 |
| 2658a | Seq. ID No. 5561 | 1473451 | 1473403 | 1472798 | Seq. ID No. 5562 |
| 2658b | Seq. ID No. 5563 | 1473451 | 1473430 | 1472798 | Seq. ID No. 5564 |
| 2659a | Seq. ID No. 5565 | 1474937 | 1474799 | 1473552 | Seq. ID No. 5566 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 2659b | Seq. ID No. 5567 | 1474937 | 1474931 | 1473552 | Seq. ID No. 5568 |
| 2660 | Seq. ID No. 5569 | 1474156 | 1474156 | 1474392 | Seq. ID No. 5570 |
| 2662 | Seq. ID No. 5571 | 1475396 | 1475390 | 1474959 | Seq. ID No. 5572 |
| 2664a | Seq. ID No. 5573 | 1477384 | 1477357 | 1475402 | Seq. ID No. 5574 |
| 2664b | Seq. ID No. 5575 | 1477384 | 1477375 | 1475402 | Seq. ID No. 5576 |
| 2665 | Seq. ID No. 5577 | 1476161 | 1476173 | 1476403 | Seq. ID No. 5578 |
| 2666a | Seq. ID No. 5579 | 1479987 | 1479798 | 1477390 | Seq. ID No. 5580 |
| 2666b | Seq. ID No. 5581 | 1479987 | 1479987 | 1477390 | Seq. ID No. 5582 |
| 2667a | Seq. ID No. 5583 | 1480983 | 1480833 | 1480003 | Seq. ID No. 5584 |
| 2667b | Seq. ID No. 5585 | 1480983 | 1480860 | 1480003 | Seq. ID No. 5586 |
| 2669a | Seq. ID No. 5587 | 1482332 | 1482248 | 1480950 | Seq. ID No. 5588 |
| 2669b | Seq. ID No. 5589 | 1482332 | 1482296 | 1480950 | Seq. ID No. 5590 |
| 2669c | Seq. ID No. 5591 | 1482332 | 1482305 | 1480950 | Seq. ID No. 5592 |
| 2672 | Seq. ID No. 5593 | 1481077 | 1481095 | 1481394 | Seq. ID No. 5594 |
| 2673 | Seq. ID No. 5595 | 1481941 | 1481944 | 1482171 | Seq. ID No. 5596 |
| 2674a | Seq. ID No. 5597 | 1484170 | 1483174 | 1482620 | Seq. ID No. 5598 |
| 2674b | Seq. ID No. 5599 | 1484170 | 1484128 | 1482620 | Seq. ID No. 5600 |
| 2676 | Seq. ID No. 5601 | 1485021 | 1485003 | 1484260 | Seq. ID No. 5602 |
| 2677a | Seq. ID No. 5603 | 1486187 | 1486013 | 1485009 | Seq. ID No. 5604 |
| 2677b | Seq. ID No. 5605 | 1486187 | 1486094 | 1485009 | Seq. ID No. 5606 |
| 2677c | Seq. ID No. 5607 | 1486187 | 1486172 | 1485009 | Seq. ID No. 5608 |
| 2679a | Seq. ID No. 5609 | 1486773 | 1486521 | 1486042 | Seq. ID No. 5610 |
| 2679b | Seq. ID No. 5611 | 1486773 | 1486701 | 1486042 | Seq. ID No. 5612 |
| 2679c | Seq. ID No. 5613 | 1486773 | 1486764 | 1486042 | Seq. ID No. 5614 |
| 2679d | Seq. ID No. 5615 | 1486773 | 1486773 | 1486042 | Seq. ID No. 5616 |
| 2680a | Seq. ID No. 5617 | 1488572 | 1488065 | 1487013 | Seq. ID No. 5618 |
| 2680b | Seq. ID No. 5619 | 1488572 | 1488401 | 1487013 | Seq. ID No. 5620 |
| 2680c | Seq. ID No. 5621 | 1488572 | 1488572 | 1487013 | Seq. ID No. 5622 |
| 2683a | Seq. ID No. 5623 | 1487806 | 1487878 | 1488216 | Seq. ID No. 5624 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 2683b | Seq. ID No. 5625 | 1487806 | 1487839 | 1488216 | Seq. ID No. 5626 |
| 2684a | Seq. ID No. 5627 | 1489943 | 1489898 | 1488828 | Seq. ID No. 5628 |
| 2684b | Seq. ID No. 5629 | 1489943 | 1489913 | 1488828 | Seq. ID No. 5630 |
| 2686 | Seq. ID No. 5631 | 1491201 | 1491189 | 1489990 | Seq. ID No. 5632 |
| 2688a | Seq. ID No. 5633 | 1491962 | 1491728 | 1491381 | Seq. ID No. 5634 |
| 2688b | Seq. ID No. 5635 | 1491962 | 1491923 | 1491381 | Seq. ID No. 5636 |
| 2688c | Seq. ID No. 5637 | 1491962 | 1491962 | 1491381 | Seq. ID No. 5638 |
| 2689a | Seq. ID No. 5639 | 1491463 | 1491526 | 1491783 | Seq. ID No. 5640 |
| 2689b | Seq. ID No. 5641 | 1491463 | 1491508 | 1491783 | Seq. ID No. 5642 |
| 2690a | Seq. ID No. 5643 | 1492662 | 1492314 | 1492012 | Seq. ID No. 5644 |
| 2690b | Seq. ID No. 5645 | 1492662 | 1492623 | 1492012 | Seq. ID No. 5646 |
| 2690c | Seq. ID No. 5647 | 1492662 | 1492656 | 1492012 | Seq. ID No. 5648 |
| 2692b | Seq. ID No. 5649 | 1492270 | 1492330 | 1492617 | Seq. ID No. 5650 |
| 2693 | Seq. ID No. 5651 | 1494018 | 1493982 | 1492696 | Seq. ID No. 5652 |
| 2694a | Seq. ID No. 5653 | 1495259 | 1494968 | 1493979 | Seq. ID No. 5654 |
| 2694b | Seq. ID No. 5655 | 1495259 | 1495259 | 1493979 | Seq. ID No. 5656 |
| 2695 | Seq. ID No. 5657 | 1496442 | 1496442 | 1495243 | Seq. ID No. 5658 |
| 2696a | Seq. ID No. 5659 | 1496578 | 1496656 | 1497375 | Seq. ID No. 5660 |
| 2696b | Seq. ID No. 5661 | 1496578 | 1496623 | 1497375 | Seq. ID No. 5662 |
| 2705 | Seq. ID No. 5663 | 1501429 | 1501429 | 1501343 | Seq. ID No. 5664 |
| 2709 | Seq. ID No. 5665 | 1505327 | 1505300 | 1504359 | Seq. ID No. 5666 |
| 2710c | Seq. ID No. 5667 | 1504984 | 1504885 | 1504604 | Seq. ID No. 5668 |
| 2712 | Seq. ID No. 5669 | 1506916 | 1506898 | 1505546 | Seq. ID No. 5670 |
| 2713 | Seq. ID No. 5671 | 1507318 | 1507309 | 1506926 | Seq. ID No. 5672 |
| 2714 | Seq. ID No. 5673 | 1507705 | 1507696 | 1507319 | Seq. ID No. 5674 |
| 2716a | Seq. ID No. 5675 | 1508501 | 1508477 | 1507878 | Seq. ID No. 5676 |
| 2716b | Seq. ID No. 5677 | 1508501 | 1508486 | 1507878 | Seq. ID No. 5678 |
| 2716c | Seq. ID No. 5679 | 1508501 | 1508501 | 1507878 | Seq. ID No. 5680 |
| 2718a | Seq. ID No. 5681 | 1508621 | 1508753 | 1509109 | Seq. ID No. 5682 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 2718b | Seq. ID No. 5683 | 1508621 | 1508702 | 1509109 | Seq. ID No. 5684 |
| 2718c | Seq. ID No. 5685 | 1508621 | 1508624 | 1509109 | Seq. ID No. 5686 |
| 2719a | Seq. ID No. 5687 | 1509372 | 1509399 | 1509650 | Seq. ID No. 5688 |
| 2719b | Seq. ID No. 5689 | 1509372 | 1509378 | 1509650 | Seq. ID No. 5690 |
| 2721a | Seq. ID No. 5691 | 1509110 | 1509434 | 1510138 | Seq. ID No. 5692 |
| 2721b | Seq. ID No. 5693 | 1509110 | 1509143 | 1510138 | Seq. ID No. 5694 |
| 2722a | Seq. ID No. 5695 | 1510153 | 1510180 | 1510692 | Seq. ID No. 5696 |
| 2722b | Seq. ID No. 5697 | 1510153 | 1510162 | 1510692 | Seq. ID No. 5698 |
| 2723 | Seq. ID No. 5699 | 1511400 | 1511397 | 1510747 | Seq. ID No. 5700 |
| 2724 | Seq. ID No. 5701 | 1512181 | 1512169 | 1511390 | Seq. ID No. 5702 |
| 2725a | Seq. ID No. 5703 | 1511541 | 1511553 | 1511786 | Seq. ID No. 5704 |
| 2725b | Seq. ID No. 5705 | 1511541 | 1511541 | 1511786 | Seq. ID No. 5706 |
| 2726 | Seq. ID No. 5707 | 1512847 | 1512844 | 1512182 | Seq. ID No. 5708 |
| 2728a | Seq. ID No. 5709 | 1512137 | 1512284 | 1512532 | Seq. ID No. 5710 |
| 2728b | Seq. ID No. 5711 | 1512137 | 1512275 | 1512532 | Seq. ID No. 5712 |
| 2731a | Seq. ID No. 5713 | 1512977 | 1513013 | 1513606 | Seq. ID No. 5714 |
| 2731b | Seq. ID No. 5715 | 1512977 | 1512980 | 1513606 | Seq. ID No. 5716 |
| 2732 | Seq. ID No. 5717 | 1514469 | 1514454 | 1513648 | Seq. ID No. 5718 |
| 2734a | Seq. ID No. 5719 | 1514794 | 1515100 | 1515729 | Seq. ID No. 5720 |
| 2734b | Seq. ID No. 5721 | 1514794 | 1514950 | 1515729 | Seq. ID No. 5722 |
| 2734c | Seq. ID No. 5723 | 1514794 | 1514827 | 1515729 | Seq. ID No. 5724 |
| 2735a | Seq. ID No. 5725 | 1516826 | 1516781 | 1515786 | Seq. ID No. 5726 |
| 2735b | Seq. ID No. 5727 | 1516826 | 1516790 | 1515786 | Seq. ID No. 5728 |
| 2738a | Seq. ID No. 5729 | 1518180 | 1517928 | 1516897 | Seq. ID No. 5730 |
| 2738b | Seq. ID No. 5731 | 1518180 | 1518084 | 1516897 | Seq. ID No. 5732 |
| 2738c | Seq. ID No. 5733 | 1518180 | 1518165 | 1516897 | Seq. ID No. 5734 |
| 2738d | Seq. ID No. 5735 | 1518180 | 1518177 | 1516897 | Seq. ID No. 5736 |
| 2742a | Seq. ID No. 5737 | 1518180 | 1518327 | 1518965 | Seq. ID No. 5738 |
| 2742b | Seq. ID No. 5739 | 1518180 | 1518195 | 1518965 | Seq. ID No. 5740 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 2743a | Seq. ID No. 5741 | 1520031 | 1520013 | 1519519 | Seq. ID No. 5742 |
| 2743b | Seq. ID No. 5743 | 1520031 | 1520022 | 1519519 | Seq. ID No. 5744 |
| 2744 | Seq. ID No. 5745 | 1520872 | 1520860 | 1520513 | Seq. ID No. 5746 |
| 2745a | Seq. ID No. 5747 | 1519154 | 1519358 | 1520725 | Seq. ID No. 5748 |
| 2745b | Seq. ID No. 5749 | 1519154 | 1519169 | 1520725 | Seq. ID No. 5750 |
| 2746 | Seq. ID No. 5751 | 1520820 | 1520832 | 1521431 | Seq. ID No. 5752 |
| 2747a | Seq. ID No. 5753 | 1522209 | 1522173 | 1521472 | Seq. ID No. 5754 |
| 2747b | Seq. ID No. 5755 | 1522209 | 1522209 | 1521472 | Seq. ID No. 5756 |
| 2748a | Seq. ID No. 5757 | 1523583 | 1523526 | 1522213 | Seq. ID No. 5758 |
| 2748b | Seq. ID No. 5759 | 1523583 | 1523568 | 1522213 | Seq. ID No. 5760 |
| 2748c | Seq. ID No. 5761 | 1523583 | 1523571 | 1522213 | Seq. ID No. 5762 |
| 2749a | Seq. ID No. 5763 | 1524727 | 1523995 | 1523705 | Seq. ID No. 5764 |
| 2749b | Seq. ID No. 5765 | 1524727 | 1524178 | 1523705 | Seq. ID No. 5766 |
| 2749c | Seq. ID No. 5767 | 1524727 | 1524541 | 1523705 | Seq. ID No. 5768 |
| 2749d | Seq. ID No. 5769 | 1524727 | 1524631 | 1523705 | Seq. ID No. 5770 |
| 2749e | Seq. ID No. 5771 | 1524727 | 1524721 | 1523705 | Seq. ID No. 5772 |
| 2750a | Seq. ID No. 5773 | 1525364 | 1525289 | 1524954 | Seq. ID No. 5774 |
| 2750b | Seq. ID No. 5775 | 1525364 | 1525319 | 1524954 | Seq. ID No. 5776 |
| 2752 | Seq. ID No. 5777 | 1525678 | 1525690 | 1527060 | Seq. ID No. 5778 |
| 2753 | Seq. ID No. 5779 | 1528083 | 1528029 | 1527202 | Seq. ID No. 5780 |
| 2757a | Seq. ID No. 5781 | 1528638 | 1528524 | 1528156 | Seq. ID No. 5782 |
| 2757b | Seq. ID No. 5783 | 1528638 | 1528623 | 1528156 | Seq. ID No. 5784 |
| 2758a | Seq. ID No. 5785 | 1529611 | 1529440 | 1528613 | Seq. ID No. 5786 |
| 2758b | Seq. ID No. 5787 | 1529611 | 1529485 | 1528613 | Seq. ID No. 5788 |
| 2758c | Seq. ID No. 5789 | 1529611 | 1529497 | 1528613 | Seq. ID No. 5790 |
| 2758d | Seq. ID No. 5791 | 1529611 | 1529581 | 1528613 | Seq. ID No. 5792 |
| 2759a | Seq. ID No. 5793 | 1530134 | 1530053 | 1529427 | Seq. ID No. 5794 |
| 2759b | Seq. ID No. 5795 | 1530134 | 1530134 | 1529427 | Seq. ID No. 5796 |
| 2760a | Seq. ID No. 5797 | 1530993 | 1530369 | 1530127 | Seq. ID No. 5798 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 2760b | Seq. ID No. 5799 | 1530993 | 1530963 | 1530127 | Seq. ID No. 5800 |
| 2760c | Seq. ID No. 5801 | 1530993 | 1530987 | 1530127 | Seq. ID No. 5802 |
| 2762 | Seq. ID No. 5803 | 1531820 | 1531820 | 1531293 | Seq. ID No. 5804 |
| 2763a | Seq. ID No. 5805 | 1532723 | 1532576 | 1531821 | Seq. ID No. 5806 |
| 2763b | Seq. ID No. 5807 | 1532723 | 1532588 | 1531821 | Seq. ID No. 5808 |
| 2763c | Seq. ID No. 5809 | 1532723 | 1532666 | 1531821 | Seq. ID No. 5810 |
| 2764 | Seq. ID No. 5811 | 1533169 | 1533145 | 1532774 | Seq. ID No. 5812 |
| 2765b | Seq. ID No. 5813 | 1533695 | 1533587 | 1533045 | Seq. ID No. 5814 |
| 2765c | Seq. ID No. 5815 | 1533695 | 1533623 | 1533045 | Seq. ID No. 5816 |
| 2766a | Seq. ID No. 5817 | 1535067 | 1535031 | 1533682 | Seq. ID No. 5818 |
| 2766b | Seq. ID No. 5819 | 1535067 | 1535061 | 1533682 | Seq. ID No. 5820 |
| 2768a | Seq. ID No. 5821 | 1536982 | 1536859 | 1535072 | Seq. ID No. 5822 |
| 2768b | Seq. ID No. 5823 | 1536982 | 1536934 | 1535072 | Seq. ID No. 5824 |
| 2768c | Seq. ID No. 5825 | 1536982 | 1536958 | 1535072 | Seq. ID No. 5826 |
| 2769a | Seq. ID No. 5827 | 1535138 | 1535258 | 1535506 | Seq. ID No. 5828 |
| 2770 | Seq. ID No. 5829 | 1536567 | 1536576 | 1536812 | Seq. ID No. 5830 |
| 2771a | Seq. ID No. 5831 | 1537982 | 1537820 | 1536999 | Seq. ID No. 5832 |
| 2771b | Seq. ID No. 5833 | 1537982 | 1537907 | 1536999 | Seq. ID No. 5834 |
| 2773 | Seq. ID No. 5835 | 1539371 | 1539353 | 1538247 | Seq. ID No. 5836 |
| 2774a | Seq. ID No. 5837 | 1540719 | 1540500 | 1539532 | Seq. ID No. 5838 |
| 2774b | Seq. ID No. 5839 | 1540719 | 1540638 | 1539532 | Seq. ID No. 5840 |
| 2774c | Seq. ID No. 5841 | 1540719 | 1540674 | 1539532 | Seq. ID No. 5842 |
| 2776a | Seq. ID No. 5843 | 1541302 | 1541248 | 1540820 | Seq. ID No. 5844 |
| 2776b | Seq. ID No. 5845 | 1541302 | 1541293 | 1540820 | Seq. ID No. 5846 |
| 2777 | Seq. ID No. 5847 | 1542467 | 1542467 | 1541280 | Seq. ID No. 5848 |
| 2778 | Seq. ID No. 5849 | 1543318 | 1543297 | 1542479 | Seq. ID No. 5850 |
| 2779 | Seq. ID No. 5851 | 1544480 | 1544465 | 1543347 | Seq. ID No. 5852 |
| 2780 | Seq. ID No. 5853 | 1545002 | 1545002 | 1544664 | Seq. ID No. 5854 |
| 2784 | Seq. ID No. 5855 | 1545859 | 1545892 | 1547058 | Seq. ID No. 5856 |

TABLE 2: ALL CLAIMED ORFS

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 2785a | Seq. ID No. 5857 | 1548736 | 1548439 | 1547480 | Seq. ID No. 5858 |
| 2785b | Seq. ID No. 5859 | 1548736 | 1548700 | 1547480 | Seq. ID No. 5860 |
| 2786a | Seq. ID No. 5861 | 1549210 | 1549273 | 1549941 | Seq. ID No. 5862 |
| 2786b | Seq. ID No. 5863 | 1549210 | 1549219 | 1549941 | Seq. ID No. 5864 |
| 2786c | Seq. ID No. 5865 | 1549210 | 1549210 | 1549941 | Seq. ID No. 5866 |
| 2787a | Seq. ID No. 5867 | 1550972 | 1550930 | 1550007 | Seq. ID No. 5868 |
| 2787b | Seq. ID No. 5869 | 1550972 | 1550948 | 1550007 | Seq. ID No. 5870 |
| 2787c | Seq. ID No. 5871 | 1550972 | 1550969 | 1550007 | Seq. ID No. 5872 |
| 2788b | Seq. ID No. 5873 | 1550131 | 1550137 | 1550595 | Seq. ID No. 5874 |
| 2789 | Seq. ID No. 5875 | 1552131 | 1552116 | 1550923 | Seq. ID No. 5876 |
| 2790 | Seq. ID No. 5877 | 1552550 | 1552550 | 1552113 | Seq. ID No. 5878 |
| 2791 | Seq. ID No. 5879 | 1552345 | 1552345 | 1552118 | Seq. ID No. 5880 |
| 2793 | Seq. ID No. 5881 | 1553495 | 1553474 | 1552551 | Seq. ID No. 5882 |
| 2794 | Seq. ID No. 5883 | 1553299 | 1553296 | 1553060 | Seq. ID No. 5884 |
| 2796a | Seq. ID No. 5885 | 1554180 | 1554075 | 1553785 | Seq. ID No. 5886 |
| 2798 | Seq. ID No. 5887 | 1554325 | 1554301 | 1553969 | Seq. ID No. 5888 |
| 2799a | Seq. ID No. 5889 | 1553810 | 1553918 | 1554184 | Seq. ID No. 5890 |
| 2799b | Seq. ID No. 5891 | 1553810 | 1553822 | 1554184 | Seq. ID No. 5892 |
| 2801a | Seq. ID No. 5893 | 1556543 | 1556078 | 1555158 | Seq. ID No. 5894 |
| 2801b | Seq. ID No. 5895 | 1556543 | 1556471 | 1555158 | Seq. ID No. 5896 |
| 2804 | Seq. ID No. 5897 | 1557136 | 1557124 | 1556468 | Seq. ID No. 5898 |
| 2805a | Seq. ID No. 5899 | 1558765 | 1557724 | 1557347 | Seq. ID No. 5900 |
| 2805b | Seq. ID No. 5901 | 1558765 | 1558723 | 1557347 | Seq. ID No. 5902 |
| 2809 | Seq. ID No. 5903 | 1559388 | 1559373 | 1558726 | Seq. ID No. 5904 |
| 2810a | Seq. ID No. 5905 | 1560847 | 1559776 | 1559384 | Seq. ID No. 5906 |
| 2810b | Seq. ID No. 5907 | 1560847 | 1560571 | 1559384 | Seq. ID No. 5908 |
| 2810c | Seq. ID No. 5909 | 1560847 | 1560772 | 1559384 | Seq. ID No. 5910 |
| 2810d | Seq. ID No. 5911 | 1560847 | 1560826 | 1559384 | Seq. ID No. 5912 |
| 2812 | Seq. ID No. 5913 | 1562885 | 1562828 | 1561227 | Seq. ID No. 5914 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|-----------------------|------------------------------|------------------|--------------------------|-----------------|----------------------------------|
| 2814 | Seq. ID No. 5915 | 1563915 | 1563912 | 1563031 | Seq. ID No. 5916 |
| 2815 | Seq. ID No. 5917 | 1564857 | 1564806 | 1563925 | Seq. ID No. 5918 |
| 2816 | Seq. ID No. 5919 | 1565582 | 1565555 | 1564821 | Seq. ID No. 5920 |
| 2818a | Seq. ID No. 5921 | 1567335 | 1565871 | 1565566 | Seq. ID No. 5922 |
| 2818b | Seq. ID No. 5923 | 1567335 | 1566276 | 1565566 | Seq. ID No. 5924 |
| 2818c | Seq. ID No. 5925 | 1567335 | 1567161 | 1565566 | Seq. ID No. 5926 |
| 2818d | Seq. ID No. 5927 | 1567335 | 1567281 | 1565566 | Seq. ID No. 5928 |
| 2818e | Seq. ID No. 5929 | 1567335 | 1567335 | 1565566 | Seq. ID No. 5930 |
| 2819 | Seq. ID No. 5931 | 1568219 | 1568195 | 1567689 | Seq. ID No. 5932 |
| 2820 | Seq. ID No. 5933 | 1569072 | 1569063 | 1568275 | Seq. ID No. 5934 |
| 2821a | Seq. ID No. 5935 | 1570005 | 1569981 | 1569271 | Seq. ID No. 5936 |
| 2821b | Seq. ID No. 5937 | 1570005 | 1570002 | 1569271 | Seq. ID No. 5938 |
| 2822a | Seq. ID No. 5939 | 1571393 | 1570382 | 1570002 | Seq. ID No. 5940 |
| 2822b | Seq. ID No. 5941 | 1571393 | 1571372 | 1570002 | Seq. ID No. 5942 |
| 2823 | Seq. ID No. 5943 | 1571696 | 1571675 | 1571394 | Seq. ID No. 5944 |
| 2824a | Seq. ID No. 5945 | 1573753 | 1573744 | 1571678 | Seq. ID No. 5946 |
| 2824b | Seq. ID No. 5947 | 1573753 | 1573753 | 1571678 | Seq. ID No. 5948 |
| 2829a | Seq. ID No. 5949 | 1574248 | 1574341 | 1574763 | Seq. ID No. 5950 |
| 2829b | Seq. ID No. 5951 | 1574248 | 1574260 | 1574763 | Seq. ID No. 5952 |
| 2831b | Seq. ID No. 5953 | 1574873 | 1574897 | 1575280 | Seq. ID No. 5954 |
| 2832 | Seq. ID No. 5955 | 1575871 | 1575832 | 1575464 | Seq. ID No. 5956 |
| 2833 | Seq. ID No. 5957 | 1576608 | 1576584 | 1576153 | Seq. ID No. 5958 |
| 2834a | Seq. ID No. 5959 | 1580917 | 1580884 | 1576613 | Seq. ID No. 5960 |
| 2834b | Seq. ID No. 5961 | 1580917 | 1580917 | 1576613 | Seq. ID No. 5962 |
| 2837a | Seq. ID No. 5963 | 1578356 | 1578371 | 1578688 | Seq. ID No. 5964 |
| 2837b | Seq. ID No. 5965 | 1578356 | 1578356 | 1578688 | Seq. ID No. 5966 |
| 2842a | Seq. ID No. 5967 | 1581713 | 1581578 | 1580898 | Seq. ID No. 5968 |
| 2842b | Seq. ID No. 5969 | 1581713 | 1581665 | 1580898 | Seq. ID No. 5970 |
| 2843a | Seq. ID No. 5971 | 1583065 | 1583050 | 1581806 | Seq. ID No. 5972 |

TABLE 2: ALL CLAIMED ORFS

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 2843b | Seq. ID No. 5973 | 1583065 | 1583062 | 1581806 | Seq. ID No. 5974 |
| 2845 | Seq. ID No. 5975 | 1583130 | 1583130 | 1583053 | Seq. ID No. 5976 |
| 2846a | Seq. ID No. 5977 | 1584739 | 1584682 | 1583180 | Seq. ID No. 5978 |
| 2846b | Seq. ID No. 5979 | 1584739 | 1584736 | 1583180 | Seq. ID No. 5980 |
| 2848 | Seq. ID No. 5981 | 1585873 | 1585864 | 1585124 | Seq. ID No. 5982 |
| 2850 | Seq. ID No. 5983 | 1586969 | 1586951 | 1586739 | Seq. ID No. 5984 |
| 2851 | Seq. ID No. 5985 | 1588973 | 1588943 | 1587099 | Seq. ID No. 5986 |
| 2852 | Seq. ID No. 5987 | 1587816 | 1587849 | 1588103 | Seq. ID No. 5988 |
| 2853 | Seq. ID No. 5989 | 1589963 | 1589963 | 1588974 | Seq. ID No. 5990 |
| 2854a | Seq. ID No. 5991 | 1590804 | 1590726 | 1590217 | Seq. ID No. 5992 |
| 2854b | Seq. ID No. 5993 | 1590804 | 1590798 | 1590217 | Seq. ID No. 5994 |
| 2855 | Seq. ID No. 5995 | 1591410 | 1591476 | 1591931 | Seq. ID No. 5996 |
| 2856a | Seq. ID No. 5997 | 1591867 | 1591996 | 1594047 | Seq. ID No. 5998 |
| 2856b | Seq. ID No. 5999 | 1591867 | 1591945 | 1594047 | Seq. ID No. 6000 |
| 2856c | Seq. ID No. 6001 | 1591867 | 1591900 | 1594047 | Seq. ID No. 6002 |
| 2857 | Seq. ID No. 6003 | 1595645 | 1595627 | 1594251 | Seq. ID No. 6004 |
| 2859 | Seq. ID No. 6005 | 1595626 | 1595626 | 1595733 | Seq. ID No. 6006 |
| 2860a | Seq. ID No. 6007 | 1597299 | 1597131 | 1596229 | Seq. ID No. 6008 |
| 2860b | Seq. ID No. 6009 | 1597299 | 1597275 | 1596229 | Seq. ID No. 6010 |
| 2860c | Seq. ID No. 6011 | 1597299 | 1597293 | 1596229 | Seq. ID No. 6012 |
| 2862 | Seq. ID No. 6013 | 1596809 | 1596821 | 1597177 | Seq. ID No. 6014 |
| 2863 | Seq. ID No. 6015 | 1598748 | 1598733 | 1597300 | Seq. ID No. 6016 |
| 2864 | Seq. ID No. 6017 | 1600262 | 1600202 | 1598736 | Seq. ID No. 6018 |
| 2868a | Seq. ID No. 6019 | 1600543 | 1600507 | 1600202 | Seq. ID No. 6020 |
| 2868b | Seq. ID No. 6021 | 1600543 | 1600525 | 1600202 | Seq. ID No. 6022 |
| 2869a | Seq. ID No. 6023 | 1601667 | 1601622 | 1600540 | Seq. ID No. 6024 |
| 2869b | Seq. ID No. 6025 | 1601667 | 1601646 | 1600540 | Seq. ID No. 6026 |
| 2869c | Seq. ID No. 6027 | 1601667 | 1601658 | 1600540 | Seq. ID No. 6028 |
| 2871 | Seq. ID No. 6029 | 1603689 | 1603686 | 1601668 | Seq. ID No. 6030 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 2872 | Seq. ID No. 6031 | 1601990 | 1602041 | 1602271 | Seq. ID No. 6032 |
| 2875 | Seq. ID No. 6033 | 1605944 | 1605923 | 1603701 | Seq. ID No. 6034 |
| 2877 | Seq. ID No. 6035 | 1606804 | 1606738 | 1606094 | Seq. ID No. 6036 |
| 2879a | Seq. ID No. 6037 | 1607607 | 1607562 | 1606828 | Seq. ID No. 6038 |
| 2879b | Seq. ID No. 6039 | 1607607 | 1607583 | 1606828 | Seq. ID No. 6040 |
| 2879c | Seq. ID No. 6041 | 1607607 | 1607607 | 1606828 | Seq. ID No. 6042 |
| 2881 | Seq. ID No. 6043 | 1608286 | 1608187 | 1607564 | Seq. ID No. 6044 |
| 2882 | Seq. ID No. 6045 | 1607771 | 1607807 | 1608046 | Seq. ID No. 6046 |
| 2883a | Seq. ID No. 6047 | 1611163 | 1609828 | 1608341 | Seq. ID No. 6048 |
| 2883b | Seq. ID No. 6049 | 1611163 | 1611025 | 1608341 | Seq. ID No. 6050 |
| 2883c | Seq. ID No. 6051 | 1611163 | 1611046 | 1608341 | Seq. ID No. 6052 |
| 2883d | Seq. ID No. 6053 | 1611163 | 1611157 | 1608341 | Seq. ID No. 6054 |
| 2886a | Seq. ID No. 6055 | 1611898 | 1611889 | 1611185 | Seq. ID No. 6056 |
| 2886b | Seq. ID No. 6057 | 1611898 | 1611898 | 1611185 | Seq. ID No. 6058 |
| 2887a | Seq. ID No. 6059 | 1611006 | 1611216 | 1611500 | Seq. ID No. 6060 |
| 2887b | Seq. ID No. 6061 | 1611006 | 1611024 | 1611500 | Seq. ID No. 6062 |
| 2888 | Seq. ID No. 6063 | 1611669 | 1611672 | 1611914 | Seq. ID No. 6064 |
| 2890 | Seq. ID No. 6065 | 1612042 | 1612057 | 1612656 | Seq. ID No. 6066 |
| 2891a | Seq. ID No. 6067 | 1613956 | 1613311 | 1612760 | Seq. ID No. 6068 |
| 2891b | Seq. ID No. 6069 | 1613956 | 1613935 | 1612760 | Seq. ID No. 6070 |
| 2891c | Seq. ID No. 6071 | 1613956 | 1613944 | 1612760 | Seq. ID No. 6072 |
| 2893b | Seq. ID No. 6073 | 1613327 | 1613333 | 1613815 | Seq. ID No. 6074 |
| 2894a | Seq. ID No. 6075 | 1614952 | 1614535 | 1613957 | Seq. ID No. 6076 |
| 2894b | Seq. ID No. 6077 | 1614952 | 1614928 | 1613957 | Seq. ID No. 6078 |
| 2894c | Seq. ID No. 6079 | 1614952 | 1614931 | 1613957 | Seq. ID No. 6080 |
| 2895 | Seq. ID No. 6081 | 1614554 | 1614620 | 1614847 | Seq. ID No. 6082 |
| 2897a | Seq. ID No. 6083 | 1616609 | 1616564 | 1615302 | Seq. ID No. 6084 |
| 2897b | Seq. ID No. 6085 | 1616609 | 1616597 | 1615302 | Seq. ID No. 6086 |
| 2900a | Seq. ID No. 6087 | 1618165 | 1618144 | 1617167 | Seq. ID No. 6088 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 2900b | Seq. ID No. 6089 | 1618165 | 1618150 | 1617167 | Seq. ID No. 6090 |
| 2901a | Seq. ID No. 6091 | 1617668 | 1617746 | 1618075 | Seq. ID No. 6092 |
| 2901b | Seq. ID No. 6093 | 1617668 | 1617680 | 1618075 | Seq. ID No. 6094 |
| 2902 | Seq. ID No. 6095 | 1619717 | 1619714 | 1618173 | Seq. ID No. 6096 |
| 2904 | Seq. ID No. 6097 | 1620381 | 1620264 | 1619935 | Seq. ID No. 6098 |
| 2905a | Seq. ID No. 6099 | 1621305 | 1620918 | 1620382 | Seq. ID No. 6100 |
| 2905b | Seq. ID No. 6101 | 1621305 | 1621284 | 1620382 | Seq. ID No. 6102 |
| 2906 | Seq. ID No. 6103 | 1623352 | 1623340 | 1621463 | Seq. ID No. 6104 |
| 2909a | Seq. ID No. 6105 | 1625836 | 1625236 | 1623602 | Seq. ID No. 6106 |
| 2909b | Seq. ID No. 6107 | 1625836 | 1625401 | 1623602 | Seq. ID No. 6108 |
| 2909c | Seq. ID No. 6109 | 1625836 | 1625821 | 1623602 | Seq. ID No. 6110 |
| 2909d | Seq. ID No. 6111 | 1625836 | 1625827 | 1623602 | Seq. ID No. 6112 |
| 2912 | Seq. ID No. 6113 | 1626173 | 1626179 | 1626469 | Seq. ID No. 6114 |
| 2913a | Seq. ID No. 6115 | 1628027 | 1627994 | 1626564 | Seq. ID No. 6116 |
| 2913b | Seq. ID No. 6117 | 1628027 | 1628021 | 1626564 | Seq. ID No. 6118 |
| 2915a | Seq. ID No. 6119 | 1628740 | 1628713 | 1628024 | Seq. ID No. 6120 |
| 2915b | Seq. ID No. 6121 | 1628740 | 1628725 | 1628024 | Seq. ID No. 6122 |
| 2915c | Seq. ID No. 6123 | 1628740 | 1628740 | 1628024 | Seq. ID No. 6124 |
| 2916 | Seq. ID No. 6125 | 1629233 | 1629218 | 1628859 | Seq. ID No. 6126 |
| 2917 | Seq. ID No. 6127 | 1629566 | 1629566 | 1629375 | Seq. ID No. 6128 |
| 2918 | Seq. ID No. 6129 | 1631092 | 1631089 | 1629779 | Seq. ID No. 6130 |
| 2920 | Seq. ID No. 6131 | 1631506 | 1631473 | 1631243 | Seq. ID No. 6132 |
| 2921 | Seq. ID No. 6133 | 1632233 | 1632218 | 1631589 | Seq. ID No. 6134 |
| 2922b | Seq. ID No. 6135 | 1631644 | 1631647 | 1631913 | Seq. ID No. 6136 |
| 2923a | Seq. ID No. 6137 | 1633273 | 1632916 | 1632269 | Seq. ID No. 6138 |
| 2923b | Seq. ID No. 6139 | 1633273 | 1633258 | 1632269 | Seq. ID No. 6140 |
| 2923c | Seq. ID No. 6141 | 1633273 | 1633267 | 1632269 | Seq. ID No. 6142 |
| 2925a | Seq. ID No. 6143 | 1634281 | 1634122 | 1633424 | Seq. ID No. 6144 |
| 2925b | Seq. ID No. 6145 | 1634281 | 1634278 | 1633424 | Seq. ID No. 6146 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 2926a | Seq. ID No. 6147 | 1635443 | 1635365 | 1634265 | Seq. ID No. 6148 |
| 2926b | Seq. ID No. 6149 | 1635443 | 1635383 | 1634265 | Seq. ID No. 6150 |
| 2926c | Seq. ID No. 6151 | 1635443 | 1635437 | 1634265 | Seq. ID No. 6152 |
| 2928a | Seq. ID No. 6153 | 1635990 | 1635924 | 1635358 | Seq. ID No. 6154 |
| 2928b | Seq. ID No. 6155 | 1635990 | 1635954 | 1635358 | Seq. ID No. 6156 |
| 2928c | Seq. ID No. 6157 | 1635990 | 1635963 | 1635358 | Seq. ID No. 6158 |
| 2929b | Seq. ID No. 6159 | 1635214 | 1635241 | 1635663 | Seq. ID No. 6160 |
| 2931a | Seq. ID No. 6161 | 1637677 | 1636687 | 1636097 | Seq. ID No. 6162 |
| 2931b | Seq. ID No. 6163 | 1637677 | 1636831 | 1636097 | Seq. ID No. 6164 |
| 2931c | Seq. ID No. 6165 | 1637677 | 1637605 | 1636097 | Seq. ID No. 6166 |
| 2933a | Seq. ID No. 6167 | 1639308 | 1639119 | 1637683 | Seq. ID No. 6168 |
| 2933b | Seq. ID No. 6169 | 1639308 | 1639299 | 1637683 | Seq. ID No. 6170 |
| 2934 | Seq. ID No. 6171 | 1640421 | 1640421 | 1639309 | Seq. ID No. 6172 |
| 2935a | Seq. ID No. 6173 | 1641368 | 1641266 | 1640808 | Seq. ID No. 6174 |
| 2935b | Seq. ID No. 6175 | 1641368 | 1641365 | 1640808 | Seq. ID No. 6176 |
| 2936 | Seq. ID No. 6177 | 1642293 | 1642278 | 1641352 | Seq. ID No. 6178 |
| 2939a | Seq. ID No. 6179 | 1642920 | 1642842 | 1642435 | Seq. ID No. 6180 |
| 2939b | Seq. ID No. 6181 | 1642920 | 1642902 | 1642435 | Seq. ID No. 6182 |
| 2941a | Seq. ID No. 6183 | 1645387 | 1644805 | 1643459 | Seq. ID No. 6184 |
| 2941b | Seq. ID No. 6185 | 1645387 | 1645246 | 1643459 | Seq. ID No. 6186 |
| 2941c | Seq. ID No. 6187 | 1645387 | 1645318 | 1643459 | Seq. ID No. 6188 |
| 2943a | Seq. ID No. 6189 | 1647063 | 1646619 | 1645318 | Seq. ID No. 6190 |
| 2943b | Seq. ID No. 6191 | 1647063 | 1646910 | 1645318 | Seq. ID No. 6192 |
| 2943c | Seq. ID No. 6193 | 1647063 | 1647036 | 1645318 | Seq. ID No. 6194 |
| 2943d | Seq. ID No. 6195 | 1647063 | 1647042 | 1645318 | Seq. ID No. 6196 |
| 2944b | Seq. ID No. 6197 | 1645364 | 1645379 | 1645759 | Seq. ID No. 6198 |
| 2945b | Seq. ID No. 6199 | 1646411 | 1646414 | 1646893 | Seq. ID No. 6200 |
| 2947 | Seq. ID No. 6201 | 1647671 | 1647659 | 1647036 | Seq. ID No. 6202 |
| 2948a | Seq. ID No. 6203 | 1648994 | 1648082 | 1647831 | Seq. ID No. 6204 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 2948b | Seq. ID No. 6205 | 1648994 | 1648781 | 1647831 | Seq. ID No. 6206 |
| 2948c | Seq. ID No. 6207 | 1648994 | 1648886 | 1647831 | Seq. ID No. 6208 |
| 2948d | Seq. ID No. 6209 | 1648994 | 1648985 | 1647831 | Seq. ID No. 6210 |
| 2950a | Seq. ID No. 6211 | 1649095 | 1649113 | 1650147 | Seq. ID No. 6212 |
| 2950b | Seq. ID No. 6213 | 1649095 | 1649095 | 1650147 | Seq. ID No. 6214 |
| 2951 | Seq. ID No. 6215 | 1650757 | 1650751 | 1650221 | Seq. ID No. 6216 |
| 2952 | Seq. ID No. 6217 | 1650135 | 1650153 | 1650560 | Seq. ID No. 6218 |
| 2954 | Seq. ID No. 6219 | 1650935 | 1650944 | 1651768 | Seq. ID No. 6220 |
| 2955a | Seq. ID No. 6221 | 1653168 | 1652175 | 1651840 | Seq. ID No. 6222 |
| 2955b | Seq. ID No. 6223 | 1653168 | 1652187 | 1651840 | Seq. ID No. 6224 |
| 2955c | Seq. ID No. 6225 | 1653168 | 1652409 | 1651840 | Seq. ID No. 6226 |
| 2955d | Seq. ID No. 6227 | 1653168 | 1652565 | 1651840 | Seq. ID No. 6228 |
| 2955e | Seq. ID No. 6229 | 1653168 | 1652973 | 1651840 | Seq. ID No. 6230 |
| 2955f | Seq. ID No. 6231 | 1653168 | 1653084 | 1651840 | Seq. ID No. 6232 |
| 2955g | Seq. ID No. 6233 | 1653168 | 1653168 | 1651840 | Seq. ID No. 6234 |
| 2957 | Seq. ID No. 6235 | 1653355 | 1653376 | 1653993 | Seq. ID No. 6236 |
| 2958a | Seq. ID No. 6237 | 1654895 | 1654766 | 1654368 | Seq. ID No. 6238 |
| 2958b | Seq. ID No. 6239 | 1654895 | 1654856 | 1654368 | Seq. ID No. 6240 |
| 2958c | Seq. ID No. 6241 | 1654895 | 1654880 | 1654368 | Seq. ID No. 6242 |
| 2959 | Seq. ID No. 6243 | 1653994 | 1653997 | 1654986 | Seq. ID No. 6244 |
| 2960a | Seq. ID No. 6245 | 1655465 | 1655390 | 1655130 | Seq. ID No. 6246 |
| 2962a | Seq. ID No. 6247 | 1654995 | 1655103 | 1655627 | Seq. ID No. 6248 |
| 2962b | Seq. ID No. 6249 | 1654995 | 1654995 | 1655627 | Seq. ID No. 6250 |
| 2963 | Seq. ID No. 6251 | 1655942 | 1655954 | 1656421 | Seq. ID No. 6252 |
| 2965a | Seq. ID No. 6253 | 1658340 | 1657503 | 1657087 | Seq. ID No. 6254 |
| 2965b | Seq. ID No. 6255 | 1658340 | 1658307 | 1657087 | Seq. ID No. 6256 |
| 2965c | Seq. ID No. 6257 | 1658340 | 1658325 | 1657087 | Seq. ID No. 6258 |
| 2966 | Seq. ID No. 6259 | 1658084 | 1658096 | 1658344 | Seq. ID No. 6260 |
| 2967 | Seq. ID No. 6261 | 1660896 | 1660872 | 1658707 | Seq. ID No. 6262 |

TABLE 2: ALL CLAIMED ORFS

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 2969 | Seq. ID No. 6263 | 1661016 | 1661061 | 1661981 | Seq. ID No. 6264 |
| 2970a | Seq. ID No. 6265 | 1663149 | 1662966 | 1662703 | Seq. ID No. 6266 |
| 2970b | Seq. ID No. 6267 | 1663149 | 1662999 | 1662703 | Seq. ID No. 6268 |
| 2971a | Seq. ID No. 6269 | 1661991 | 1662033 | 1662746 | Seq. ID No. 6270 |
| 2971b | Seq. ID No. 6271 | 1661991 | 1661991 | 1662746 | Seq. ID No. 6272 |
| 2974a | Seq. ID No. 6273 | 1662698 | 1663724 | 1663963 | Seq. ID No. 6274 |
| 2974b | Seq. ID No. 6275 | 1662698 | 1662743 | 1663963 | Seq. ID No. 6276 |
| 2975 | Seq. ID No. 6277 | 1665419 | 1665395 | 1664037 | Seq. ID No. 6278 |
| 2977a | Seq. ID No. 6279 | 1665491 | 1665566 | 1666129 | Seq. ID No. 6280 |
| 2977b | Seq. ID No. 6281 | 1665491 | 1665506 | 1666129 | Seq. ID No. 6282 |
| 2978a | Seq. ID No. 6283 | 1666409 | 1666355 | 1666131 | Seq. ID No. 6284 |
| 2978b | Seq. ID No. 6285 | 1666409 | 1666364 | 1666131 | Seq. ID No. 6286 |
| 2979 | Seq. ID No. 6287 | 1666051 | 1666126 | 1666689 | Seq. ID No. 6288 |
| 2980a | Seq. ID No. 6289 | 1668091 | 1667302 | 1666901 | Seq. ID No. 6290 |
| 2980b | Seq. ID No. 6291 | 1668091 | 1667875 | 1666901 | Seq. ID No. 6292 |
| 2980c | Seq. ID No. 6293 | 1668091 | 1667995 | 1666901 | Seq. ID No. 6294 |
| 2980d | Seq. ID No. 6295 | 1668091 | 1668028 | 1666901 | Seq. ID No. 6296 |
| 2980e | Seq. ID No. 6297 | 1668091 | 1668070 | 1666901 | Seq. ID No. 6298 |
| 2984 | Seq. ID No. 6299 | 1669334 | 1669304 | 1667970 | Seq. ID No. 6300 |
| 2986a | Seq. ID No. 6301 | 1670826 | 1670514 | 1669684 | Seq. ID No. 6302 |
| 2986b | Seq. ID No. 6303 | 1670826 | 1670706 | 1669684 | Seq. ID No. 6304 |
| 2986c | Seq. ID No. 6305 | 1670826 | 1670790 | 1669684 | Seq. ID No. 6306 |
| 2988a | Seq. ID No. 6307 | 1672193 | 1672121 | 1670793 | Seq. ID No. 6308 |
| 2988b | Seq. ID No. 6309 | 1672193 | 1672148 | 1670793 | Seq. ID No. 6310 |
| 2988c | Seq. ID No. 6311 | 1672193 | 1672154 | 1670793 | Seq. ID No. 6312 |
| 2989 | Seq. ID No. 6313 | 1672635 | 1672536 | 1672342 | Seq. ID No. 6314 |
| 2990 | Seq. ID No. 6315 | 1674173 | 1674143 | 1672551 | Seq. ID No. 6316 |
| 2991a | Seq. ID No. 6317 | 1675155 | 1674828 | 1674154 | Seq. ID No. 6318 |
| 2991b | Seq. ID No. 6319 | 1675155 | 1675080 | 1674154 | Seq. ID No. 6320 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 2991c | Seq. ID No. 6321 | 1675155 | 1675140 | 1674154 | Seq. ID No. 6322 |
| 2992 | Seq. ID No. 6323 | 1675279 | 1675294 | 1675782 | Seq. ID No. 6324 |
| 2993a | Seq. ID No. 6325 | 1676636 | 1676624 | 1675920 | Seq. ID No. 6326 |
| 2993b | Seq. ID No. 6327 | 1676636 | 1676627 | 1675920 | Seq. ID No. 6328 |
| 2995a | Seq. ID No. 6329 | 1677557 | 1677437 | 1676643 | Seq. ID No. 6330 |
| 2995b | Seq. ID No. 6331 | 1677557 | 1677554 | 1676643 | Seq. ID No. 6332 |
| 2997 | Seq. ID No. 6333 | 1677875 | 1677869 | 1677558 | Seq. ID No. 6334 |
| 2998a | Seq. ID No. 6335 | 1678755 | 1678617 | 1677862 | Seq. ID No. 6336 |
| 2998b | Seq. ID No. 6337 | 1678755 | 1678701 | 1677862 | Seq. ID No. 6338 |
| 2999 | Seq. ID No. 6339 | 1679123 | 1679120 | 1678734 | Seq. ID No. 6340 |
| 3001 | Seq. ID No. 6341 | 1680254 | 1680221 | 1679229 | Seq. ID No. 6342 |
| 3003 | Seq. ID No. 6343 | 1680586 | 1680574 | 1680245 | Seq. ID No. 6344 |
| 3005 | Seq. ID No. 6345 | 1681275 | 1681266 | 1680622 | Seq. ID No. 6346 |
| 3008a | Seq. ID No. 6347 | 1681972 | 1681849 | 1681283 | Seq. ID No. 6348 |
| 3008b | Seq. ID No. 6349 | 1681972 | 1681879 | 1681283 | Seq. ID No. 6350 |
| 3008c | Seq. ID No. 6351 | 1681972 | 1681882 | 1681283 | Seq. ID No. 6352 |
| 3008d | Seq. ID No. 6353 | 1681972 | 1681936 | 1681283 | Seq. ID No. 6354 |
| 3010a | Seq. ID No. 6355 | 1682354 | 1682306 | 1681995 | Seq. ID No. 6356 |
| 3010b | Seq. ID No. 6357 | 1682354 | 1682315 | 1681995 | Seq. ID No. 6358 |
| 3012 | Seq. ID No. 6359 | 1684114 | 1684102 | 1682330 | Seq. ID No. 6360 |
| 3015 | Seq. ID No. 6361 | 1684647 | 1684692 | 1685450 | Seq. ID No. 6362 |
| 3016a | Seq. ID No. 6363 | 1686951 | 1686111 | 1685629 | Seq. ID No. 6364 |
| 3016b | Seq. ID No. 6365 | 1686951 | 1686861 | 1685629 | Seq. ID No. 6366 |
| 3016c | Seq. ID No. 6367 | 1686951 | 1686930 | 1685629 | Seq. ID No. 6368 |
| 3017 | Seq. ID No. 6369 | 1687931 | 1687823 | 1686927 | Seq. ID No. 6370 |
| 3018a | Seq. ID No. 6371 | 1688418 | 1688376 | 1687897 | Seq. ID No. 6372 |
| 3018b | Seq. ID No. 6373 | 1688418 | 1688379 | 1687897 | Seq. ID No. 6374 |
| 3020 | Seq. ID No. 6375 | 1689300 | 1689261 | 1688419 | Seq. ID No. 6376 |
| 3021 | Seq. ID No. 6377 | 1689758 | 1689743 | 1689423 | Seq. ID No. 6378 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 3022 | Seq. ID No. 6379 | 1692324 | 1692324 | 1689814 | Seq. ID No. 6380 |
| 3023 | Seq. ID No. 6381 | 1689787 | 1689787 | 1690059 | Seq. ID No. 6382 |
| 3024a | Seq. ID No. 6383 | 1691465 | 1691537 | 1691806 | Seq. ID No. 6384 |
| 3024b | Seq. ID No. 6385 | 1691465 | 1691474 | 1691806 | Seq. ID No. 6386 |
| 3026a | Seq. ID No. 6387 | 1692828 | 1692804 | 1692346 | Seq. ID No. 6388 |
| 3026b | Seq. ID No. 6389 | 1692828 | 1692819 | 1692346 | Seq. ID No. 6390 |
| 3028a | Seq. ID No. 6391 | 1693823 | 1693703 | 1693047 | Seq. ID No. 6392 |
| 3028b | Seq. ID No. 6393 | 1693823 | 1693709 | 1693047 | Seq. ID No. 6394 |
| 3028c | Seq. ID No. 6395 | 1693823 | 1693763 | 1693047 | Seq. ID No. 6396 |
| 3029a | Seq. ID No. 6397 | 1694761 | 1694746 | 1693703 | Seq. ID No. 6398 |
| 3029b | Seq. ID No. 6399 | 1694761 | 1694758 | 1693703 | Seq. ID No. 6400 |
| 3031a | Seq. ID No. 6401 | 1695379 | 1695412 | 1695777 | Seq. ID No. 6402 |
| 3031b | Seq. ID No. 6403 | 1695379 | 1695394 | 1695777 | Seq. ID No. 6404 |
| 3032a | Seq. ID No. 6405 | 1696446 | 1696257 | 1696033 | Seq. ID No. 6406 |
| 3032b | Seq. ID No. 6407 | 1696446 | 1696299 | 1696033 | Seq. ID No. 6408 |
| 3033a | Seq. ID No. 6409 | 1697227 | 1697194 | 1696382 | Seq. ID No. 6410 |
| 3033b | Seq. ID No. 6411 | 1697227 | 1697197 | 1696382 | Seq. ID No. 6412 |
| 3035 | Seq. ID No. 6413 | 1697987 | 1697987 | 1697232 | Seq. ID No. 6414 |
| 3037a | Seq. ID No. 6415 | 1698709 | 1698781 | 1699263 | Seq. ID No. 6416 |
| 3037b | Seq. ID No. 6417 | 1698709 | 1698739 | 1699263 | Seq. ID No. 6418 |
| 3038 | Seq. ID No. 6419 | 1699841 | 1699841 | 1700038 | Seq. ID No. 6420 |
| 3040a | Seq. ID No. 6421 | 1701079 | 1700950 | 1700138 | Seq. ID No. 6422 |
| 3040b | Seq. ID No. 6423 | 1701079 | 1701079 | 1700138 | Seq. ID No. 6424 |
| 3042a | Seq. ID No. 6425 | 1700433 | 1700445 | 1700675 | Seq. ID No. 6426 |
| 3042b | Seq. ID No. 6427 | 1700433 | 1700433 | 1700675 | Seq. ID No. 6428 |
| 3043a | Seq. ID No. 6429 | 1701375 | 1701306 | 1701073 | Seq. ID No. 6430 |
| 3043b | Seq. ID No. 6431 | 1701375 | 1701324 | 1701073 | Seq. ID No. 6432 |
| 3044 | Seq. ID No. 6433 | 1701638 | 1701617 | 1701321 | Seq. ID No. 6434 |
| 3045a | Seq. ID No. 6435 | 1702055 | 1702040 | 1701639 | Seq. ID No. 6436 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 3045b | Seq. ID No. 6437 | 1702055 | 1702043 | 1701639 | Seq. ID No. 6438 |
| 3048a | Seq. ID No. 6439 | 1702494 | 1702383 | 1702033 | Seq. ID No. 6440 |
| 3049a | Seq. ID No. 6441 | 1704304 | 1703878 | 1702388 | Seq. ID No. 6442 |
| 3049b | Seq. ID No. 6443 | 1704304 | 1704055 | 1702388 | Seq. ID No. 6444 |
| 3049c | Seq. ID No. 6445 | 1704304 | 1704289 | 1702388 | Seq. ID No. 6446 |
| 3051a | Seq. ID No. 6447 | 1704655 | 1704649 | 1704305 | Seq. ID No. 6448 |
| 3051b | Seq. ID No. 6449 | 1704655 | 1704655 | 1704305 | Seq. ID No. 6450 |
| 3052 | Seq. ID No. 6451 | 1706095 | 1706095 | 1704656 | Seq. ID No. 6452 |
| 3054 | Seq. ID No. 6453 | 1705443 | 1705446 | 1705685 | Seq. ID No. 6454 |
| 3055a | Seq. ID No. 6455 | 1706386 | 1706362 | 1706096 | Seq. ID No. 6456 |
| 3055b | Seq. ID No. 6457 | 1706386 | 1706383 | 1706096 | Seq. ID No. 6458 |
| 3057 | Seq. ID No. 6459 | 1708245 | 1708242 | 1706380 | Seq. ID No. 6460 |
| 3059 | Seq. ID No. 6461 | 1709019 | 1709007 | 1708246 | Seq. ID No. 6462 |
| 3060 | Seq. ID No. 6463 | 1711662 | 1711659 | 1709020 | Seq. ID No. 6464 |
| 3061 | Seq. ID No. 6465 | 1709528 | 1709528 | 1709259 | Seq. ID No. 6466 |
| 3062 | Seq. ID No. 6467 | 1709324 | 1709330 | 1710160 | Seq. ID No. 6468 |
| 3063a | Seq. ID No. 6469 | 1710350 | 1710368 | 1710655 | Seq. ID No. 6470 |
| 3063b | Seq. ID No. 6471 | 1710350 | 1710365 | 1710655 | Seq. ID No. 6472 |
| 3064b | Seq. ID No. 6473 | 1710920 | 1710938 | 1711330 | Seq. ID No. 6474 |
| 3065a | Seq. ID No. 6475 | 1712082 | 1711980 | 1711663 | Seq. ID No. 6476 |
| 3065b | Seq. ID No. 6477 | 1712082 | 1711983 | 1711663 | Seq. ID No. 6478 |
| 3066 | Seq. ID No. 6479 | 1711331 | 1711412 | 1711774 | Seq. ID No. 6480 |
| 3067 | Seq. ID No. 6481 | 1712393 | 1712384 | 1712001 | Seq. ID No. 6482 |
| 3068 | Seq. ID No. 6483 | 1713000 | 1712988 | 1712401 | Seq. ID No. 6484 |
| 3069 | Seq. ID No. 6485 | 1713434 | 1713380 | 1712991 | Seq. ID No. 6486 |
| 3071 | Seq. ID No. 6487 | 1714045 | 1714003 | 1713764 | Seq. ID No. 6488 |
| 3072a | Seq. ID No. 6489 | 1714353 | 1714293 | 1714000 | Seq. ID No. 6490 |
| 3073 | Seq. ID No. 6491 | 1714645 | 1714639 | 1714304 | Seq. ID No. 6492 |
| 3074 | Seq. ID No. 6493 | 1715783 | 1715780 | 1714785 | Seq. ID No. 6494 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 3075 | Seq. ID No. 6495 | 1716350 | 1716335 | 1715784 | Seq. ID No. 6496 |
| 3076 | Seq. ID No. 6497 | 1715964 | 1716024 | 1716341 | Seq. ID No. 6498 |
| 3077a | Seq. ID No. 6499 | 1717443 | 1717344 | 1716424 | Seq. ID No. 6500 |
| 3077b | Seq. ID No. 6501 | 1717443 | 1717425 | 1716424 | Seq. ID No. 6502 |
| 3077c | Seq. ID No. 6503 | 1717443 | 1717443 | 1716424 | Seq. ID No. 6504 |
| 3078 | Seq. ID No. 6505 | 1718902 | 1718866 | 1717376 | Seq. ID No. 6506 |
| 3079 | Seq. ID No. 6507 | 1717769 | 1717769 | 1718020 | Seq. ID No. 6508 |
| 3081a | Seq. ID No. 6509 | 1720200 | 1720161 | 1718881 | Seq. ID No. 6510 |
| 3081b | Seq. ID No. 6511 | 1720200 | 1720179 | 1718881 | Seq. ID No. 6512 |
| 3083c | Seq. ID No. 6513 | 1720609 | 1720570 | 1720154 | Seq. ID No. 6514 |
| 3083d | Seq. ID No. 6515 | 1720609 | 1720588 | 1720154 | Seq. ID No. 6516 |
| 3085 | Seq. ID No. 6517 | 1720239 | 1720287 | 1720517 | Seq. ID No. 6518 |
| 3086 | Seq. ID No. 6519 | 1721223 | 1721223 | 1720798 | Seq. ID No. 6520 |
| 3087a | Seq. ID No. 6521 | 1721741 | 1721516 | 1721220 | Seq. ID No. 6522 |
| 3087c | Seq. ID No. 6523 | 1721741 | 1721729 | 1721220 | Seq. ID No. 6524 |
| 3088 | Seq. ID No. 6525 | 1722323 | 1722311 | 1721742 | Seq. ID No. 6526 |
| 3089a | Seq. ID No. 6527 | 1722579 | 1722534 | 1722301 | Seq. ID No. 6528 |
| 3089b | Seq. ID No. 6529 | 1722579 | 1722540 | 1722301 | Seq. ID No. 6530 |
| 3090 | Seq. ID No. 6531 | 1723087 | 1723024 | 1722710 | Seq. ID No. 6532 |
| 3091 | Seq. ID No. 6533 | 1723434 | 1723377 | 1723024 | Seq. ID No. 6534 |
| 3092a | Seq. ID No. 6535 | 1726056 | 1726017 | 1723726 | Seq. ID No. 6536 |
| 3092b | Seq. ID No. 6537 | 1726056 | 1726023 | 1723726 | Seq. ID No. 6538 |
| 3095 | Seq. ID No. 6539 | 1725374 | 1725374 | 1724937 | Seq. ID No. 6540 |
| 3096a | Seq. ID No. 6541 | 1724735 | 1724747 | 1724995 | Seq. ID No. 6542 |
| 3096b | Seq. ID No. 6543 | 1724735 | 1724738 | 1724995 | Seq. ID No. 6544 |
| 3097 | Seq. ID No. 6545 | 1726568 | 1726568 | 1726035 | Seq. ID No. 6546 |
| 3098a | Seq. ID No. 6547 | 1728002 | 1727765 | 1726569 | Seq. ID No. 6548 |
| 3098b | Seq. ID No. 6549 | 1728002 | 1727993 | 1726569 | Seq. ID No. 6550 |
| 3098c | Seq. ID No. 6551 | 1728002 | 1728002 | 1726569 | Seq. ID No. 6552 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|------------|-------------------|-----------|---------------|----------|-----------------------|
| 3099 | Seq. ID No. 6553 | 1728681 | 1728669 | 1727986 | Seq. ID No. 6554 |
| 3100a | Seq. ID No. 6555 | 1727960 | 1728044 | 1728307 | Seq. ID No. 6556 |
| 3100b | Seq. ID No. 6557 | 1727960 | 1728017 | 1728307 | Seq. ID No. 6558 |
| 3101 | Seq. ID No. 6559 | 1729161 | 1729158 | 1728682 | Seq. ID No. 6560 |
| 3102 | Seq. ID No. 6561 | 1729471 | 1729429 | 1729220 | Seq. ID No. 6562 |
| 3103b | Seq. ID No. 6563 | 1729917 | 1729917 | 1729426 | Seq. ID No. 6564 |
| 3104 | Seq. ID No. 6565 | 1730101 | 1730101 | 1729931 | Seq. ID No. 6566 |
| 3105 | Seq. ID No. 6567 | 1730458 | 1730434 | 1730144 | Seq. ID No. 6568 |
| 3106 | Seq. ID No. 6569 | 1730695 | 1730668 | 1730465 | Seq. ID No. 6570 |
| 3107a | Seq. ID No. 6571 | 1731400 | 1731364 | 1731125 | Seq. ID No. 6572 |
| 3107b | Seq. ID No. 6573 | 1731400 | 1731385 | 1731125 | Seq. ID No. 6574 |
| 3108a | Seq. ID No. 6575 | 1730751 | 1730838 | 1731467 | Seq. ID No. 6576 |
| 3108b | Seq. ID No. 6577 | 1730751 | 1730778 | 1731467 | Seq. ID No. 6578 |
| 3109 | Seq. ID No. 6579 | 1731554 | 1731557 | 1732228 | Seq. ID No. 6580 |
| 3110a | Seq. ID No. 6581 | 1732232 | 1732322 | 1732933 | Seq. ID No. 6582 |
| 3110b | Seq. ID No. 6583 | 1732232 | 1732244 | 1732933 | Seq. ID No. 6584 |
| 3113 | Seq. ID No. 6585 | 1733078 | 1733090 | 1734292 | Seq. ID No. 6586 |
| 3116 | Seq. ID No. 6587 | 1734912 | 1734921 | 1735769 | Seq. ID No. 6588 |
| 3118a | Seq. ID No. 6589 | 1735601 | 1735763 | 1736248 | Seq. ID No. 6590 |
| 3118b | Seq. ID No. 6591 | 1735601 | 1735673 | 1736248 | Seq. ID No. 6592 |
| 3119a | Seq. ID No. 6593 | 1736902 | 1736743 | 1736339 | Seq. ID No. 6594 |
| 3119b | Seq. ID No. 6595 | 1736902 | 1736782 | 1736339 | Seq. ID No. 6596 |
| 3119c | Seq. ID No. 6597 | 1736902 | 1736809 | 1736339 | Seq. ID No. 6598 |
| 3119d | Seq. ID No. 6599 | 1736902 | 1736848 | 1736339 | Seq. ID No. 6600 |
| 3119e | Seq. ID No. 6601 | 1736902 | 1736863 | 1736339 | Seq. ID No. 6602 |
| 3119f | Seq. ID No. 6603 | 1736902 | 1736872 | 1736339 | Seq. ID No. 6604 |
| 3121 | Seq. ID No. 6605 | 1736957 | 1736978 | 1737658 | Seq. ID No. 6606 |
| 3122a | Seq. ID No. 6607 | 1739218 | 1739212 | 1738022 | Seq. ID No. 6608 |
| 3122b | Seq. ID No. 6609 | 1739218 | 1739218 | 1738022 | Seq. ID No. 6610 |

TABLE 2: ALL CLAIMED ORFs

| ORF Number | DNA SEQ ID Number | ORF Start | Protein Start | ORF Stop | Protein SEQ ID Number |
|-----------------------|------------------------------|------------------|--------------------------|-----------------|----------------------------------|
| 3123a | Seq. ID No. 6611 | 1741016 | 1740947 | 1739265 | Seq. ID No. 6612 |
| 3123b | Seq. ID No. 6613 | 1741016 | 1741007 | 1739265 | Seq. ID No. 6614 |
| 3124 | Seq. ID No. 6615 | 1741584 | 1741551 | 1740970 | Seq. ID No. 6616 |
| 3126 | Seq. ID No. 6617 | 1742270 | 1742243 | 1741596 | Seq. ID No. 6618 |
| 3129a | Seq. ID No. 6619 | 1742959 | 1742902 | 1742246 | Seq. ID No. 6620 |
| 3129b | Seq. ID No. 6621 | 1742959 | 1742932 | 1742246 | Seq. ID No. 6622 |
| 3131 | Seq. ID No. 6623 | 1745173 | 1745167 | 1743977 | Seq. ID No. 6624 |
| 3134a | Seq. ID No. 6625 | 1747570 | 1747468 | 1745222 | Seq. ID No. 6626 |
| 3134b | Seq. ID No. 6627 | 1747570 | 1747507 | 1745222 | Seq. ID No. 6628 |
| 3138 | Seq. ID No. 6629 | 1748892 | 1748832 | 1747537 | Seq. ID No. 6630 |
| 3140 | Seq. ID No. 6631 | 1748324 | 1748327 | 1748560 | Seq. ID No. 6632 |
| 3141 | Seq. ID No. 6633 | 1750186 | 1750177 | 1748972 | Seq. ID No. 6634 |
| 3145a | Seq. ID No. 6635 | 1752277 | 1752205 | 1750973 | Seq. ID No. 6636 |
| 3145b | Seq. ID No. 6637 | 1752277 | 1752259 | 1750973 | Seq. ID No. 6638 |
| 3145c | Seq. ID No. 6639 | 1752277 | 1752274 | 1750973 | Seq. ID No. 6640 |
| 3147a | Seq. ID No. 6641 | 125 | 1754054 | 1752510 | Seq. ID No. 6642 |
| 3147b | Seq. ID No. 6643 | 125 | 122 | 1752510 | Seq. ID No. 6644 |
| 3147c | Seq. ID No. 6645 | 125 | 83 | 1752510 | Seq. ID No. 6646 |
| 3149a | Seq. ID No. 6647 | 7 | 1754326 | 1754123 | Seq. ID No. 6648 |
| 3150a | Seq. ID No. 6649 | 1753936 | 1754086 | 1754331 | Seq. ID No. 6650 |

Listed in Table 3 are ORFs that have been identified using Signal P algorithm (i.e. Signal P value of "YES") were considered to be surface exposed. 250 ORFs met all four of the criteria of the SignalP program for having a signal peptide (listed as a 'YES' in the SignalP column). A subset of 208 of these ORFs was also predicted by the HMM SignalP software to contain a signal peptide (Signal peptide). Of these 208 ORFs, the PSORT program predicted 21 ORFs to be localized to the periplasm (Peri); 29 ORFs to be localized to the outer membrane (OM); 153 ORFs to be localized to the cytoplasmic inner membrane (IM); and 5 ORFs to be localized to the cytoplasm. Of the 42 ORFs predicted by HMM SignalP to be non-secretory proteins (Non-secretory protein), 6 ORFs

were predicted by PSORT to be localized to the periplasm and 7 ORFs were predicted by PSORT to be localized to the cytoplasm, 180 ORFs were predicted to be localized to the IM and 31 ORFs were predicted to be localized to the OM.

TABLE 3: SIGNALP: YES

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | HMMSignalP | PSORT |
|-------------------|--------------------------|------------------------------|-----------------------|--------------|
| 51c | Seq. ID No. 89 | Seq. ID No. 90 | Non-secretory protein | IM |
| 69 | Seq. ID No. 127 | Seq. ID No. 128 | Non-secretory protein | Cyto |
| 73a | Seq. ID No. 131 | Seq. ID No. 132 | Signal peptide | Cyto |
| 73b | Seq. ID No. 133 | Seq. ID No. 134 | Signal peptide | Cyto |
| 87a | Seq. ID No. 161 | Seq. ID No. 162 | Signal peptide | OM |
| 87b | Seq. ID No. 163 | Seq. ID No. 164 | Signal peptide | IM |
| 109c | Seq. ID No. 213 | Seq. ID No. 214 | Signal peptide | IM |
| 109d | Seq. ID No. 215 | Seq. ID No. 216 | Signal peptide | IM |
| 114 | Seq. ID No. 225 | Seq. ID No. 226 | Signal peptide | OM |
| 129a | Seq. ID No. 249 | Seq. ID No. 250 | Signal peptide | IM |
| 129b | Seq. ID No. 251 | Seq. ID No. 252 | Signal peptide | IM |
| 145b | Seq. ID No. 287 | Seq. ID No. 288 | Signal peptide | IM |
| 145c | Seq. ID No. 289 | Seq. ID No. 290 | Signal peptide | IM |
| 179a | Seq. ID No. 369 | Seq. ID No. 370 | Non-secretory protein | IM |
| 179b | Seq. ID No. 371 | Seq. ID No. 372 | Non-secretory protein | IM |
| 180b | Seq. ID No. 375 | Seq. ID No. 376 | Signal peptide | IM |
| 183a | Seq. ID No. 377 | Seq. ID No. 378 | Non-secretory protein | IM |
| 245a | Seq. ID No. 497 | Seq. ID No. 498 | Signal peptide | IM |
| 246a | Seq. ID No. 503 | Seq. ID No. 504 | Signal peptide | IM |
| 246b | Seq. ID No. 505 | Seq. ID No. 506 | Signal peptide | IM |
| 255b | Seq. ID No. 527 | Seq. ID No. 528 | Signal peptide | IM |
| 264b | Seq. ID No. 549 | Seq. ID No. 550 | Signal peptide | IM |
| 277c | Seq. ID No. 575 | Seq. ID No. 576 | Signal peptide | OM |
| 297 | Seq. ID No. 617 | Seq. ID No. 618 | Signal peptide | Peri |
| 318a | Seq. ID No. 657 | Seq. ID No. 658 | Signal peptide | OM |
| 318b | Seq. ID No. 659 | Seq. ID No. 660 | Signal peptide | OM |

TABLE 3: SIGNALP: YES

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | HMMSignalP | PSORT |
|------------|-------------------|-----------------------|-----------------------|-------|
| 318c | Seq. ID No. 661 | Seq. ID No. 662 | Signal peptide | IM |
| 324 | Seq. ID No. 675 | Seq. ID No. 676 | Signal peptide | OM |
| 342a | Seq. ID No. 715 | Seq. ID No. 716 | Signal peptide | IM |
| 342b | Seq. ID No. 717 | Seq. ID No. 718 | Signal peptide | IM |
| 349b | Seq. ID No. 745 | Seq. ID No. 746 | Signal peptide | OM |
| 349c | Seq. ID No. 747 | Seq. ID No. 748 | Signal peptide | OM |
| 352a | Seq. ID No. 755 | Seq. ID No. 756 | Signal peptide | IM |
| 352b | Seq. ID No. 757 | Seq. ID No. 758 | Signal peptide | IM |
| 352c | Seq. ID No. 759 | Seq. ID No. 760 | Signal peptide | IM |
| 354a | Seq. ID No. 761 | Seq. ID No. 762 | Signal peptide | IM |
| 356c | Seq. ID No. 773 | Seq. ID No. 774 | Non-secretory protein | IM |
| 372d | Seq. ID No. 807 | Seq. ID No. 808 | Signal peptide | OM |
| 448 | Seq. ID No. 967 | Seq. ID No. 968 | Signal peptide | IM |
| 451a | Seq. ID No. 973 | Seq. ID No. 974 | Non-secretory protein | Peri |
| 451b | Seq. ID No. 975 | Seq. ID No. 976 | Non-secretory protein | Peri |
| 464b | Seq. ID No. 1013 | Seq. ID No. 1014 | Signal peptide | IM |
| 471a | Seq. ID No. 1025 | Seq. ID No. 1026 | Non-secretory protein | Cyto |
| 471b | Seq. ID No. 1027 | Seq. ID No. 1028 | Non-secretory protein | Cyto |
| 472f | Seq. ID No. 1039 | Seq. ID No. 1040 | Signal peptide | IM |
| 492 | Seq. ID No. 1075 | Seq. ID No. 1076 | Signal peptide | OM |
| 499a | Seq. ID No. 1089 | Seq. ID No. 1090 | Non-secretory protein | IM |
| 547a | Seq. ID No. 1195 | Seq. ID No. 1196 | Signal peptide | OM |
| 547b | Seq. ID No. 1197 | Seq. ID No. 1198 | Signal peptide | IM |
| 553c | Seq. ID No. 1207 | Seq. ID No. 1208 | Non-secretory protein | IM |
| 571 | Seq. ID No. 1239 | Seq. ID No. 1240 | Non-secretory protein | Peri |
| 576a | Seq. ID No. 1243 | Seq. ID No. 1244 | Signal peptide | Peri |
| 576b | Seq. ID No. 1245 | Seq. ID No. 1246 | Signal peptide | IM |
| 587c | Seq. ID No. 1269 | Seq. ID No. 1270 | Signal peptide | IM |
| 609a | Seq. ID No. 1315 | Seq. ID No. 1316 | Signal peptide | IM |

TABLE 3: SIGNALP: YES

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | HMMSignalP | PSORT |
|------------|-------------------|-----------------------|-----------------------|-------|
| 609b | Seq. ID No. 1317 | Seq. ID No. 1318 | Signal peptide | IM |
| 613d | Seq. ID No. 1331 | Seq. ID No. 1332 | Signal peptide | IM |
| 631b | Seq. ID No. 1365 | Seq. ID No. 1366 | Signal peptide | IM |
| 631c | Seq. ID No. 1367 | Seq. ID No. 1368 | Signal peptide | IM |
| 631d | Seq. ID No. 1369 | Seq. ID No. 1370 | Signal peptide | IM |
| 679a | Seq. ID No. 1445 | Seq. ID No. 1446 | Signal peptide | Cyto |
| 679b | Seq. ID No. 1447 | Seq. ID No. 1448 | Signal peptide | IM |
| 722a | Seq. ID No. 1513 | Seq. ID No. 1514 | Signal peptide | IM |
| 722c | Seq. ID No. 1517 | Seq. ID No. 1518 | Signal peptide | IM |
| 738a | Seq. ID No. 1545 | Seq. ID No. 1546 | Signal peptide | IM |
| 738c | Seq. ID No. 1549 | Seq. ID No. 1550 | Non-secretory protein | IM |
| 743b | Seq. ID No. 1561 | Seq. ID No. 1562 | Signal peptide | IM |
| 746a | Seq. ID No. 1569 | Seq. ID No. 1570 | Non-secretory protein | IM |
| 746b | Seq. ID No. 1571 | Seq. ID No. 1572 | Signal peptide | IM |
| 754b | Seq. ID No. 1585 | Seq. ID No. 1586 | Signal peptide | IM |
| 786b | Seq. ID No. 1643 | Seq. ID No. 1644 | Signal peptide | Peri |
| 789c | Seq. ID No. 1653 | Seq. ID No. 1654 | Signal peptide | IM |
| 794b | Seq. ID No. 1661 | Seq. ID No. 1662 | Signal peptide | OM |
| 794c | Seq. ID No. 1663 | Seq. ID No. 1664 | Signal peptide | OM |
| 826 | Seq. ID No. 1707 | Seq. ID No. 1708 | Signal peptide | IM |
| 837b | Seq. ID No. 1733 | Seq. ID No. 1734 | Signal peptide | IM |
| 843 | Seq. ID No. 1737 | Seq. ID No. 1738 | Signal peptide | IM |
| 853b | Seq. ID No. 1755 | Seq. ID No. 1756 | Signal peptide | IM |
| 859a | Seq. ID No. 1765 | Seq. ID No. 1766 | Signal peptide | IM |
| 859b | Seq. ID No. 1767 | Seq. ID No. 1768 | Signal peptide | IM |
| 862 | Seq. ID No. 1775 | Seq. ID No. 1776 | Non-secretory protein | Peri |
| 870 | Seq. ID No. 1791 | Seq. ID No. 1792 | Signal peptide | OM |
| 876 | Seq. ID No. 1805 | Seq. ID No. 1806 | Signal peptide | Peri |
| 931 | Seq. ID No. 1875 | Seq. ID No. 1876 | Signal peptide | IM |

TABLE 3: SIGNALP: YES

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | HMMSignalP | PSORT |
|------------|-------------------|-----------------------|-----------------------|-------|
| 977a | Seq. ID No. 1969 | Seq. ID No. 1970 | Signal peptide | OM |
| 981a | Seq. ID No. 1981 | Seq. ID No. 1982 | Signal peptide | IM |
| 1017c | Seq. ID No. 2053 | Seq. ID No. 2054 | Signal peptide | IM |
| 1017d | Seq. ID No. 2055 | Seq. ID No. 2056 | Signal peptide | IM |
| 1036a | Seq. ID No. 2087 | Seq. ID No. 2088 | Signal peptide | IM |
| 1036b | Seq. ID No. 2089 | Seq. ID No. 2090 | Signal peptide | IM |
| 1036c | Seq. ID No. 2091 | Seq. ID No. 2092 | Signal peptide | IM |
| 1044a | Seq. ID No. 2105 | Seq. ID No. 2106 | Signal peptide | IM |
| 1047b | Seq. ID No. 2115 | Seq. ID No. 2116 | Signal peptide | OM |
| 1065a | Seq. ID No. 2149 | Seq. ID No. 2150 | Signal peptide | Peri |
| 1065b | Seq. ID No. 2151 | Seq. ID No. 2152 | Signal peptide | Peri |
| 1067 | Seq. ID No. 2159 | Seq. ID No. 2160 | Signal peptide | OM |
| 1077d | Seq. ID No. 2177 | Seq. ID No. 2178 | Signal peptide | IM |
| 1141a | Seq. ID No. 2277 | Seq. ID No. 2278 | Non-secretory protein | Cyto |
| 1146c | Seq. ID No. 2293 | Seq. ID No. 2294 | Signal peptide | IM |
| 1155c | Seq. ID No. 2321 | Seq. ID No. 2322 | Signal peptide | IM |
| 1167a | Seq. ID No. 2347 | Seq. ID No. 2348 | Signal peptide | Peri |
| 1168 | Seq. ID No. 2351 | Seq. ID No. 2352 | Signal peptide | Peri |
| 1169a | Seq. ID No. 2353 | Seq. ID No. 2354 | Signal peptide | IM |
| 1172 | Seq. ID No. 2365 | Seq. ID No. 2366 | Signal peptide | IM |
| 1182b | Seq. ID No. 2395 | Seq. ID No. 2396 | Non-secretory protein | IM |
| 1192b | Seq. ID No. 2421 | Seq. ID No. 2422 | Signal peptide | IM |
| 1196a | Seq. ID No. 2425 | Seq. ID No. 2426 | Signal peptide | Peri |
| 1196b | Seq. ID No. 2427 | Seq. ID No. 2428 | Signal peptide | Peri |
| 1197 | Seq. ID No. 2429 | Seq. ID No. 2430 | Signal peptide | IM |
| 1207 | Seq. ID No. 2449 | Seq. ID No. 2450 | Signal peptide | OM |
| 1212 | Seq. ID No. 2459 | Seq. ID No. 2460 | Signal peptide | IM |
| 1237 | Seq. ID No. 2525 | Seq. ID No. 2526 | Signal peptide | OM |
| 1241a | Seq. ID No. 2531 | Seq. ID No. 2532 | Signal peptide | IM |

TABLE 3: SIGNALP: YES

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | HMMSignalP | PSORT |
|------------|-------------------|-----------------------|-----------------------|-------|
| 1268b | Seq. ID No. 2607 | Seq. ID No. 2608 | Signal peptide | IM |
| 1288 | Seq. ID No. 2651 | Seq. ID No. 2652 | Signal peptide | IM |
| 1308a | Seq. ID No. 2679 | Seq. ID No. 2680 | Signal peptide | IM |
| 1315 | Seq. ID No. 2693 | Seq. ID No. 2694 | Signal peptide | IM |
| 1318 | Seq. ID No. 2699 | Seq. ID No. 2700 | Signal peptide | IM |
| 1319b | Seq. ID No. 2703 | Seq. ID No. 2704 | Signal peptide | IM |
| 1348 | Seq. ID No. 2753 | Seq. ID No. 2754 | Non-secretory protein | IM |
| 1366a | Seq. ID No. 2785 | Seq. ID No. 2786 | Signal peptide | Peri |
| 1381b | Seq. ID No. 2813 | Seq. ID No. 2814 | Signal peptide | IM |
| 1387a | Seq. ID No. 2829 | Seq. ID No. 2830 | Non-secretory protein | OM |
| 1393a | Seq. ID No. 2835 | Seq. ID No. 2836 | Signal peptide | Peri |
| 1393d | Seq. ID No. 2841 | Seq. ID No. 2842 | Signal peptide | IM |
| 1412a | Seq. ID No. 2879 | Seq. ID No. 2880 | Non-secretory protein | IM |
| 1412b | Seq. ID No. 2881 | Seq. ID No. 2882 | Signal peptide | IM |
| 1438 | Seq. ID No. 2935 | Seq. ID No. 2936 | Signal peptide | OM |
| 1439a | Seq. ID No. 2937 | Seq. ID No. 2938 | Signal peptide | IM |
| 1440b | Seq. ID No. 2949 | Seq. ID No. 2950 | Signal peptide | IM |
| 1446a | Seq. ID No. 2965 | Seq. ID No. 2966 | Non-secretory protein | IM |
| 1446b | Seq. ID No. 2967 | Seq. ID No. 2968 | Non-secretory protein | IM |
| 1448 | Seq. ID No. 2973 | Seq. ID No. 2974 | Signal peptide | IM |
| 1463a | Seq. ID No. 3007 | Seq. ID No. 3008 | Signal peptide | IM |
| 1463b | Seq. ID No. 3009 | Seq. ID No. 3010 | Signal peptide | IM |
| 1463c | Seq. ID No. 3011 | Seq. ID No. 3012 | Signal peptide | IM |
| 1470a | Seq. ID No. 3029 | Seq. ID No. 3030 | Signal peptide | IM |
| 1470b | Seq. ID No. 3031 | Seq. ID No. 3032 | Signal peptide | IM |
| 1503a | Seq. ID No. 3109 | Seq. ID No. 3110 | Non-secretory protein | IM |
| 1503b | Seq. ID No. 3111 | Seq. ID No. 3112 | Non-secretory protein | IM |
| 1559a | Seq. ID No. 3219 | Seq. ID No. 3220 | Signal peptide | IM |
| 1563 | Seq. ID No. 3223 | Seq. ID No. 3224 | Non-secretory protein | Cyto |

TABLE 3: SIGNALP: YES

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | HMMSignalP | PSORT |
|------------|-------------------|-----------------------|-----------------------|-------|
| 1584 | Seq. ID No. 3273 | Seq. ID No. 3274 | Non-secretory protein | Peri |
| 1594a | Seq. ID No. 3297 | Seq. ID No. 3298 | Signal peptide | IM |
| 1612 | Seq. ID No. 3331 | Seq. ID No. 3332 | Signal peptide | IM |
| 1616b | Seq. ID No. 3335 | Seq. ID No. 3336 | Signal peptide | IM |
| 1622a | Seq. ID No. 3341 | Seq. ID No. 3342 | Non-secretory protein | Cyto |
| 1624 | Seq. ID No. 3349 | Seq. ID No. 3350 | Signal peptide | Peri |
| 1625b | Seq. ID No. 3353 | Seq. ID No. 3354 | Signal peptide | IM |
| 1625c | Seq. ID No. 3355 | Seq. ID No. 3356 | Signal peptide | IM |
| 1634c | Seq. ID No. 3377 | Seq. ID No. 3378 | Signal peptide | IM |
| 1646b | Seq. ID No. 3391 | Seq. ID No. 3392 | Signal peptide | IM |
| 1659c | Seq. ID No. 3425 | Seq. ID No. 3426 | Signal peptide | IM |
| 1673a | Seq. ID No. 3449 | Seq. ID No. 3450 | Signal peptide | IM |
| 1688b | Seq. ID No. 3493 | Seq. ID No. 3494 | Signal peptide | IM |
| 1718b | Seq. ID No. 3573 | Seq. ID No. 3574 | Signal peptide | Cyto |
| 1743 | Seq. ID No. 3611 | Seq. ID No. 3612 | Signal peptide | IM |
| 1747 | Seq. ID No. 3619 | Seq. ID No. 3620 | Signal peptide | IM |
| 1784b | Seq. ID No. 3689 | Seq. ID No. 3690 | Signal peptide | IM |
| 1808a | Seq. ID No. 3753 | Seq. ID No. 3754 | Signal peptide | IM |
| 1808b | Seq. ID No. 3755 | Seq. ID No. 3756 | Signal peptide | IM |
| 1809c | Seq. ID No. 3765 | Seq. ID No. 3766 | Signal peptide | IM |
| 1812a | Seq. ID No. 3781 | Seq. ID No. 3782 | Signal peptide | IM |
| 1812b | Seq. ID No. 3783 | Seq. ID No. 3784 | Signal peptide | IM |
| 1842b | Seq. ID No. 3851 | Seq. ID No. 3852 | Signal peptide | IM |
| 1862a | Seq. ID No. 3903 | Seq. ID No. 3904 | Signal peptide | IM |
| 1919a | Seq. ID No. 4005 | Seq. ID No. 4006 | Signal peptide | Peri |
| 1919b | Seq. ID No. 4007 | Seq. ID No. 4008 | Signal peptide | IM |
| 1931b | Seq. ID No. 4027 | Seq. ID No. 4028 | Signal peptide | IM |
| 1946b | Seq. ID No. 4073 | Seq. ID No. 4074 | Signal peptide | IM |
| 1973 | Seq. ID No. 4137 | Seq. ID No. 4138 | Signal peptide | OM |

TABLE 3: SIGNALP: YES

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | HMMSignalP | PSORT |
|-----------------------|------------------------------|----------------------------------|-----------------------|--------------|
| 1977a | Seq. ID No. 4141 | Seq. ID No. 4142 | Signal peptide | OM |
| 1977b | Seq. ID No. 4143 | Seq. ID No. 4144 | Signal peptide | OM |
| 1977c | Seq. ID No. 4145 | Seq. ID No. 4146 | Signal peptide | OM |
| 2016c | Seq. ID No. 4225 | Seq. ID No. 4226 | Signal peptide | IM |
| 2074b | Seq. ID No. 4343 | Seq. ID No. 4344 | Signal peptide | OM |
| 2096a | Seq. ID No. 4385 | Seq. ID No. 4386 | Signal peptide | IM |
| 2101 | Seq. ID No. 4399 | Seq. ID No. 4400 | Signal peptide | Peri |
| 2140a | Seq. ID No. 4469 | Seq. ID No. 4470 | Signal peptide | IM |
| 2147a | Seq. ID No. 4483 | Seq. ID No. 4484 | Signal peptide | IM |
| 2150a | Seq. ID No. 4493 | Seq. ID No. 4494 | Signal peptide | IM |
| 2150b | Seq. ID No. 4495 | Seq. ID No. 4496 | Signal peptide | IM |
| 2165 | Seq. ID No. 4533 | Seq. ID No. 4534 | Signal peptide | IM |
| 2245 | Seq. ID No. 4699 | Seq. ID No. 4700 | Non-secretory protein | OM |
| 2253b | Seq. ID No. 4709 | Seq. ID No. 4710 | Signal peptide | IM |
| 2253c | Seq. ID No. 4711 | Seq. ID No. 4712 | Signal peptide | IM |
| 2264a | Seq. ID No. 4735 | Seq. ID No. 4736 | Non-secretory protein | Peri |
| 2308 | Seq. ID No. 4827 | Seq. ID No. 4828 | Signal peptide | OM |
| 2329b | Seq. ID No. 4871 | Seq. ID No. 4872 | Signal peptide | IM |
| 2329c | Seq. ID No. 4873 | Seq. ID No. 4874 | Signal peptide | IM |
| 2331 | Seq. ID No. 4879 | Seq. ID No. 4880 | Non-secretory protein | IM |
| 2358 | Seq. ID No. 4921 | Seq. ID No. 4922 | Signal peptide | IM |
| 2386b | Seq. ID No. 4981 | Seq. ID No. 4982 | Non-secretory protein | IM |
| 2453 | Seq. ID No. 5115 | Seq. ID No. 5116 | Signal peptide | OM |
| 2518a | Seq. ID No. 5267 | Seq. ID No. 5268 | Signal peptide | Cyto |
| 2550c | Seq. ID No. 5341 | Seq. ID No. 5342 | Signal peptide | IM |
| 2567b | Seq. ID No. 5387 | Seq. ID No. 5388 | Signal peptide | IM |
| 2616d | Seq. ID No. 5465 | Seq. ID No. 5466 | Signal peptide | IM |
| 2616e | Seq. ID No. 5467 | Seq. ID No. 5468 | Non-secretory protein | IM |
| 2618a | Seq. ID No. 5479 | Seq. ID No. 5480 | Non-secretory protein | IM |

TABLE 3: SIGNALP: YES

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | HMMSignalP | PSORT |
|------------|-------------------|-----------------------|-----------------------|-------|
| 2625a | Seq. ID No. 5497 | Seq. ID No. 5498 | Signal peptide | Peri |
| 2629b | Seq. ID No. 5513 | Seq. ID No. 5514 | Signal peptide | OM |
| 2648a | Seq. ID No. 5543 | Seq. ID No. 5544 | Signal peptide | IM |
| 2648b | Seq. ID No. 5545 | Seq. ID No. 5546 | Signal peptide | IM |
| 2659b | Seq. ID No. 5567 | Seq. ID No. 5568 | Non-secretory protein | IM |
| 2669a | Seq. ID No. 5587 | Seq. ID No. 5588 | Signal peptide | Peri |
| 2669b | Seq. ID No. 5589 | Seq. ID No. 5590 | Signal peptide | IM |
| 2669c | Seq. ID No. 5591 | Seq. ID No. 5592 | Signal peptide | IM |
| 2679b | Seq. ID No. 5611 | Seq. ID No. 5612 | Signal peptide | IM |
| 2680c | Seq. ID No. 5621 | Seq. ID No. 5622 | Signal peptide | IM |
| 2689b | Seq. ID No. 5641 | Seq. ID No. 5642 | Signal peptide | Peri |
| 2718a | Seq. ID No. 5681 | Seq. ID No. 5682 | Signal peptide | IM |
| 2734a | Seq. ID No. 5719 | Seq. ID No. 5720 | Signal peptide | IM |
| 2749e | Seq. ID No. 5771 | Seq. ID No. 5772 | Signal peptide | IM |
| 2757b | Seq. ID No. 5783 | Seq. ID No. 5784 | Signal peptide | IM |
| 2801b | Seq. ID No. 5895 | Seq. ID No. 5896 | Signal peptide | IM |
| 2805a | Seq. ID No. 5899 | Seq. ID No. 5900 | Signal peptide | IM |
| 2805b | Seq. ID No. 5901 | Seq. ID No. 5902 | Signal peptide | IM |
| 2818d | Seq. ID No. 5927 | Seq. ID No. 5928 | Signal peptide | IM |
| 2818e | Seq. ID No. 5929 | Seq. ID No. 5930 | Signal peptide | IM |
| 2822a | Seq. ID No. 5939 | Seq. ID No. 5940 | Signal peptide | IM |
| 2852 | Seq. ID No. 5987 | Seq. ID No. 5988 | Non-secretory protein | IM |
| 2862 | Seq. ID No. 6013 | Seq. ID No. 6014 | Non-secretory protein | Cyto |
| 2900a | Seq. ID No. 6087 | Seq. ID No. 6088 | Signal peptide | Peri |
| 2900b | Seq. ID No. 6089 | Seq. ID No. 6090 | Signal peptide | Peri |
| 2901a | Seq. ID No. 6091 | Seq. ID No. 6092 | Signal peptide | IM |
| 2901b | Seq. ID No. 6093 | Seq. ID No. 6094 | Non-secretory protein | IM |
| 2902 | Seq. ID No. 6095 | Seq. ID No. 6096 | Signal peptide | IM |
| 2906 | Seq. ID No. 6103 | Seq. ID No. 6104 | Signal peptide | IM |

TABLE 3: SIGNALP: YES

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | HMMSignalP | PSORT |
|-----------------------|------------------------------|----------------------------------|-----------------------|--------------|
| 2933b | Seq. ID No. 6169 | Seq. ID No. 6170 | Signal peptide | IM |
| 2941b | Seq. ID No. 6185 | Seq. ID No. 6186 | Signal peptide | IM |
| 2941c | Seq. ID No. 6187 | Seq. ID No. 6188 | Signal peptide | IM |
| 2943d | Seq. ID No. 6195 | Seq. ID No. 6196 | Non-secretory protein | IM |
| 2944b | Seq. ID No. 6197 | Seq. ID No. 6198 | Signal peptide | IM |
| 2948a | Seq. ID No. 6203 | Seq. ID No. 6204 | Signal peptide | IM |
| 2948b | Seq. ID No. 6205 | Seq. ID No. 6206 | Signal peptide | IM |
| 2955a | Seq. ID No. 6221 | Seq. ID No. 6222 | Signal peptide | IM |
| 2955b | Seq. ID No. 6223 | Seq. ID No. 6224 | Signal peptide | IM |
| 2955e | Seq. ID No. 6229 | Seq. ID No. 6230 | Signal peptide | IM |
| 2980b | Seq. ID No. 6291 | Seq. ID No. 6292 | Non-secretory protein | IM |
| 3037a | Seq. ID No. 6415 | Seq. ID No. 6416 | Signal peptide | OM |
| 3037b | Seq. ID No. 6417 | Seq. ID No. 6418 | Non-secretory protein | IM |
| 3064b | Seq. ID No. 6473 | Seq. ID No. 6474 | Signal peptide | Peri |
| 3079 | Seq. ID No. 6507 | Seq. ID No. 6508 | Non-secretory protein | IM |
| 3096b | Seq. ID No. 6543 | Seq. ID No. 6544 | Signal peptide | IM |
| 3119b | Seq. ID No. 6595 | Seq. ID No. 6596 | Signal peptide | IM |
| 3119c | Seq. ID No. 6597 | Seq. ID No. 6598 | Signal peptide | IM |
| 3119d | Seq. ID No. 6599 | Seq. ID No. 6600 | Signal peptide | IM |
| 3119e | Seq. ID No. 6601 | Seq. ID No. 6602 | Signal peptide | IM |
| 3119f | Seq. ID No. 6603 | Seq. ID No. 6604 | Signal peptide | IM |

Listed in Table 4 are all 526 ORFs of the SignalP program that met only three of the criteria of having a signal peptide (listed as a 'yes' in the SignalP column). A subset of 359 of these ORFs was also predicted by the HMM SignalP software to contain a signal peptide. Of these 359 ORFs, the PSORT program predicted 24 ORFs to be localized to the periplasm (Peri); 44 ORFs to be localized to the outer membrane (OM); 267 ORFs to be localized to the cytoplasmic membrane (IM); and 24 ORFs to be localized to the cytoplasm. Of the 167 ORFs predicted by HMM SignalP to be Non-secretory proteins, PSORT predicted 6 ORFs to be localized to the periplasm; 1 ORF to

be localized to the outer membrane; 122 ORFs to be localized to the cytoplasmic membrane; and 38 ORFs to be localized to the cytoplasm. Also listed for all ORFs is the predicted number of transmembrane, α -helical hydrophobic domains predicted by the TopPred2 software (listed in the MSD column). If no value is listed, none has yet been determined. (The same is also the case for Tables 5 and 6).

TABLE 4: SIGNALP: YES

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | HMMSignalP | PSORT | MSD |
|-----------------------|------------------------------|----------------------------------|-----------------------|--------------|------------|
| 4a | Seq. ID No. 7 | Seq. ID No. 8 | Signal peptide | IM | 4 |
| 4c | Seq. ID No. 11 | Seq. ID No. 12 | Non-secretory protein | IM | 12 |
| 16 | Seq. ID No. 23 | Seq. ID No. 24 | Non-secretory protein | IM | 0 |
| 38a | Seq. ID No. 45 | Seq. ID No. 46 | Signal peptide | OM | 1 |
| 38b | Seq. ID No. 47 | Seq. ID No. 48 | Signal peptide | OM | 1 |
| 40 | Seq. ID No. 53 | Seq. ID No. 54 | Signal peptide | IM | 1 |
| 41c | Seq. ID No. 59 | Seq. ID No. 60 | Non-secretory protein | IM | 1 |
| 44a | Seq. ID No. 65 | Seq. ID No. 66 | Signal peptide | IM | 2 |
| 44b | Seq. ID No. 67 | Seq. ID No. 68 | Signal peptide | IM | 2 |
| 51b | Seq. ID No. 87 | Seq. ID No. 88 | Signal peptide | IM | 9 |
| 55 | Seq. ID No. 91 | Seq. ID No. 92 | Non-secretory protein | IM | 1 |
| 79 | Seq. ID No. 139 | Seq. ID No. 140 | Non-secretory protein | IM | 2 |
| 83 | Seq. ID No. 151 | Seq. ID No. 152 | Non-secretory protein | IM | 2 |
| 86 | Seq. ID No. 159 | Seq. ID No. 160 | Signal peptide | Peri | 1 |
| 87c | Seq. ID No. 165 | Seq. ID No. 166 | Non-secretory protein | IM | 2 |
| 89 | Seq. ID No. 169 | Seq. ID No. 170 | Non-secretory protein | IM | 2 |
| 94 | Seq. ID No. 185 | Seq. ID No. 186 | Non-secretory protein | IM | 2 |
| 109b | Seq. ID No. 211 | Seq. ID No. 212 | Signal peptide | IM | 7 |
| 111a | Seq. ID No. 217 | Seq. ID No. 218 | Signal peptide | IM | 6 |
| 124a | Seq. ID No. 235 | Seq. ID No. 236 | Signal peptide | IM | 1 |
| 124b | Seq. ID No. 237 | Seq. ID No. 238 | Signal peptide | IM | 3 |
| 124c | Seq. ID No. 239 | Seq. ID No. 240 | Non-secretory protein | IM | 5 |
| 138a | Seq. ID No. 271 | Seq. ID No. 272 | Signal peptide | IM | 6 |

TABLE 4: SIGNALP: YES

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | HMMSignalP | PSORT | MSD |
|---------------|----------------------|--------------------------|-----------------------|-------|-----|
| 145a | Seq. ID No. 285 | Seq. ID No. 286 | Signal peptide | IM | 3 |
| 145d | Seq. ID No. 291 | Seq. ID No. 292 | Non-secretory protein | IM | 12 |
| 162a | Seq. ID No. 327 | Seq. ID No. 328 | Signal peptide | IM | 2 |
| 170 | Seq. ID No. 349 | Seq. ID No. 350 | Non-secretory protein | IM | 1 |
| 187a | Seq. ID No. 385 | Seq. ID No. 386 | Non-secretory protein | IM | 1 |
| 187b | Seq. ID No. 387 | Seq. ID No. 388 | Non-secretory protein | IM | 1 |
| 196 | Seq. ID No. 407 | Seq. ID No. 408 | Non-secretory protein | Cyto | 1 |
| 205 | Seq. ID No. 427 | Seq. ID No. 428 | Non-secretory protein | Cyto | |
| 207 | Seq. ID No. 431 | Seq. ID No. 432 | Non-secretory protein | IM | 0 |
| 223a | Seq. ID No. 455 | Seq. ID No. 456 | Signal peptide | Cyto | 1 |
| 223b | Seq. ID No. 457 | Seq. ID No. 458 | Signal peptide | Cyto | 1 |
| 241 | Seq. ID No. 495 | Seq. ID No. 496 | Signal peptide | IM | 1 |
| 245b | Seq. ID No. 499 | Seq. ID No. 500 | Signal peptide | IM | 10 |
| 248b | Seq. ID No. 511 | Seq. ID No. 512 | Signal peptide | IM | 9 |
| 249a | Seq. ID No. 513 | Seq. ID No. 514 | Signal peptide | OM | 1 |
| 249b | Seq. ID No. 515 | Seq. ID No. 516 | Signal peptide | IM | 1 |
| 255a | Seq. ID No. 525 | Seq. ID No. 526 | Signal peptide | IM | 6 |
| 263a | Seq. ID No. 545 | Seq. ID No. 546 | Signal peptide | OM | 1 |
| 263b | Seq. ID No. 547 | Seq. ID No. 548 | Signal peptide | IM | 1 |
| 268 | Seq. ID No. 557 | Seq. ID No. 558 | Signal peptide | Cyto | 1 |
| 273b | Seq. ID No. 569 | Seq. ID No. 570 | Signal peptide | IM | 12 |
| 282 | Seq. ID No. 589 | Seq. ID No. 590 | Non-secretory protein | Cyto | |
| 283a | Seq. ID No. 591 | Seq. ID No. 592 | Signal peptide | OM | 1 |
| 283b | Seq. ID No. 593 | Seq. ID No. 594 | Signal peptide | OM | 1 |
| 284a | Seq. ID No. 595 | Seq. ID No. 596 | Non-secretory protein | IM | 5 |
| 290b | Seq. ID No. 609 | Seq. ID No. 610 | Non-secretory protein | IM | |
| 311 | Seq. ID No. 637 | Seq. ID No. 638 | Signal peptide | IM | 6 |
| 313a | Seq. ID No. 639 | Seq. ID No. 640 | Signal peptide | IM | 2 |
| 313b | Seq. ID No. 641 | Seq. ID No. 642 | Signal peptide | IM | 3 |

TABLE 4: SIGNALP: YES

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | HMMSignalP | PSORT | MSD |
|---------------|----------------------|--------------------------|-----------------------|-------|-----|
| 317a | Seq. ID No. 653 | Seq. ID No. 654 | Signal peptide | IM | 2 |
| 321 | Seq. ID No. 669 | Seq. ID No. 670 | Signal peptide | OM | 1 |
| 327b | Seq. ID No. 679 | Seq. ID No. 680 | Signal peptide | IM | 5 |
| 342c | Seq. ID No. 719 | Seq. ID No. 720 | Signal peptide | IM | 4 |
| 342e | Seq. ID No. 723 | Seq. ID No. 724 | Signal peptide | IM | 10 |
| 346b | Seq. ID No. 739 | Seq. ID No. 740 | Non-secretory protein | Cyto | 0 |
| 350a | Seq. ID No. 749 | Seq. ID No. 750 | Signal peptide | IM | 6 |
| 350b | Seq. ID No. 751 | Seq. ID No. 752 | Signal peptide | IM | 6 |
| 354b | Seq. ID No. 763 | Seq. ID No. 764 | Signal peptide | IM | 6 |
| 354c | Seq. ID No. 765 | Seq. ID No. 766 | Signal peptide | IM | 6 |
| 356a | Seq. ID No. 769 | Seq. ID No. 770 | Signal peptide | IM | 3 |
| 358a | Seq. ID No. 777 | Seq. ID No. 778 | Signal peptide | IM | 3 |
| 358b | Seq. ID No. 779 | Seq. ID No. 780 | Signal peptide | IM | 10 |
| 358c | Seq. ID No. 781 | Seq. ID No. 782 | Signal peptide | IM | 10 |
| 382b | Seq. ID No. 819 | Seq. ID No. 820 | Signal peptide | OM | 1 |
| 418b | Seq. ID No. 895 | Seq. ID No. 896 | Non-secretory protein | IM | 7 |
| 420a | Seq. ID No. 903 | Seq. ID No. 904 | Non-secretory protein | IM | 1 |
| 420b | Seq. ID No. 905 | Seq. ID No. 906 | Non-secretory protein | IM | 1 |
| 422 | Seq. ID No. 909 | Seq. ID No. 910 | Non-secretory protein | Cyto | |
| 431 | Seq. ID No. 935 | Seq. ID No. 936 | Signal peptide | OM | 1 |
| 434 | Seq. ID No. 937 | Seq. ID No. 938 | Signal peptide | IM | 2 |
| 440 | Seq. ID No. 951 | Seq. ID No. 952 | Non-secretory protein | IM | 2 |
| 441b | Seq. ID No. 955 | Seq. ID No. 956 | Signal peptide | IM | 2 |
| 452b | Seq. ID No. 979 | Seq. ID No. 980 | Signal peptide | IM | 4 |
| 452c | Seq. ID No. 981 | Seq. ID No. 982 | Signal peptide | IM | 4 |
| 452d | Seq. ID No. 983 | Seq. ID No. 984 | Signal peptide | IM | 4 |
| 452e | Seq. ID No. 985 | Seq. ID No. 986 | Signal peptide | IM | 4 |
| 462 | Seq. ID No. 1005 | Seq. ID No. 1006 | Signal peptide | Peri | 1 |
| 463a | Seq. ID No. 1007 | Seq. ID No. 1008 | Signal peptide | Peri | 1 |

TABLE 4: SIGNALP: YES

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | HMMSignalP | PSORT | MSD |
|---------------|----------------------|--------------------------|-----------------------|-------|-----|
| 463b | Seq. ID No. 1009 | Seq. ID No. 1010 | Signal peptide | Peri | 1 |
| 464c | Seq. ID No. 1015 | Seq. ID No. 1016 | Signal peptide | IM | 11 |
| 465b | Seq. ID No. 1019 | Seq. ID No. 1020 | Signal peptide | OM | 3 |
| 472a | Seq. ID No. 1029 | Seq. ID No. 1030 | Signal peptide | IM | 4 |
| 472b | Seq. ID No. 1031 | Seq. ID No. 1032 | Signal peptide | IM | 5 |
| 477b | Seq. ID No. 1047 | Seq. ID No. 1048 | Non-secretory protein | Cyto | 0 |
| 499b | Seq. ID No. 1091 | Seq. ID No. 1092 | Non-secretory protein | IM | 2 |
| 510 | Seq. ID No. 1111 | Seq. ID No. 1112 | Non-secretory protein | Cyto | |
| 524b | Seq. ID No. 1137 | Seq. ID No. 1138 | Signal peptide | IM | 6 |
| 530a | Seq. ID No. 1151 | Seq. ID No. 1152 | Signal peptide | IM | |
| 530b | Seq. ID No. 1153 | Seq. ID No. 1154 | Non-secretory protein | Peri | |
| 541c | Seq. ID No. 1169 | Seq. ID No. 1170 | Signal peptide | IM | 5 |
| 542 | Seq. ID No. 1173 | Seq. ID No. 1174 | Signal peptide | IM | 1 |
| 545a | Seq. ID No. 1183 | Seq. ID No. 1184 | Signal peptide | IM | 3 |
| 546b | Seq. ID No. 1191 | Seq. ID No. 1192 | Non-secretory protein | IM | 1 |
| 546c | Seq. ID No. 1193 | Seq. ID No. 1194 | Non-secretory protein | IM | 1 |
| 556 | Seq. ID No. 1213 | Seq. ID No. 1214 | Signal peptide | IM | 2 |
| 561 | Seq. ID No. 1223 | Seq. ID No. 1224 | Signal peptide | IM | 5 |
| 564b | Seq. ID No. 1229 | Seq. ID No. 1230 | Signal peptide | IM | 4 |
| 578a | Seq. ID No. 1247 | Seq. ID No. 1248 | Non-secretory protein | Cyto | 0 |
| 585b | Seq. ID No. 1259 | Seq. ID No. 1260 | Signal peptide | Cyto | 0 |
| 595a | Seq. ID No. 1283 | Seq. ID No. 1284 | Signal peptide | IM | 2 |
| 603a | Seq. ID No. 1307 | Seq. ID No. 1308 | Non-secretory protein | Cyto | 1 |
| 610a | Seq. ID No. 1319 | Seq. ID No. 1320 | Signal peptide | IM | 1 |
| 610b | Seq. ID No. 1321 | Seq. ID No. 1322 | Non-secretory protein | IM | 1 |
| 613b | Seq. ID No. 1327 | Seq. ID No. 1328 | Signal peptide | IM | 7 |
| 619a | Seq. ID No. 1341 | Seq. ID No. 1342 | Signal peptide | Cyto | 1 |
| 619b | Seq. ID No. 1343 | Seq. ID No. 1344 | Signal peptide | Cyto | 1 |
| 623 | Seq. ID No. 1347 | Seq. ID No. 1348 | Signal peptide | Peri | 1 |

TABLE 4: SIGNALP: YES

| ORF | DNA SEQ ID | Protein SEQ ID | | | |
|--------|------------------|------------------|-----------------------|-------|-----|
| Number | Number | Number | HMMSignalP | PSORT | MSD |
| 640 | Seq. ID No. 1389 | Seq. ID No. 1390 | Non-secretory protein | Cyto | 0 |
| 645 | Seq. ID No. 1401 | Seq. ID No. 1402 | Signal peptide | Peri | 1 |
| 665 | Seq. ID No. 1429 | Seq. ID No. 1430 | Signal peptide | IM | 3 |
| 699b | Seq. ID No. 1479 | Seq. ID No. 1480 | Non-secretory protein | IM | 1 |
| 739 | Seq. ID No. 1551 | Seq. ID No. 1552 | Signal peptide | IM | 2 |
| 743a | Seq. ID No. 1559 | Seq. ID No. 1560 | Signal peptide | IM | 2 |
| 749 | Seq. ID No. 1579 | Seq. ID No. 1580 | Signal peptide | IM | 1 |
| 754c | Seq. ID No. 1587 | Seq. ID No. 1588 | Non-secretory protein | IM | .9 |
| 772a | Seq. ID No. 1621 | Seq. ID No. 1622 | Signal peptide | IM | 5 |
| 775 | Seq. ID No. 1627 | Seq. ID No. 1628 | Non-secretory protein | IM | 7 |
| 779 | Seq. ID No. 1633 | Seq. ID No. 1634 | Signal peptide | Peri | 2 |
| 788a | Seq. ID No. 1645 | Seq. ID No. 1646 | Signal peptide | IM | 4 |
| 788b | Seq. ID No. 1647 | Seq. ID No. 1648 | Signal peptide | IM | 6 |
| 789a | Seq. ID No. 1649 | Seq. ID No. 1650 | Signal peptide | IM | 4 |
| 791 | Seq. ID No. 1655 | Seq. ID No. 1656 | Non-secretory protein | Cyto | |
| 794d | Seq. ID No. 1665 | Seq. ID No. 1666 | Signal peptide | OM | 0 |
| 795 | Seq. ID No. 1667 | Seq. ID No. 1668 | Non-secretory protein | Cyto | |
| 799a | Seq. ID No. 1671 | Seq. ID No. 1672 | Signal peptide | IM | 2 |
| 799d | Seq. ID No. 1677 | Seq. ID No. 1678 | Signal peptide | IM | 9 |
| 799e | Seq. ID No. 1679 | Seq. ID No. 1680 | Signal peptide | IM | 10 |
| 799f | Seq. ID No. 1681 | Seq. ID No. 1682 | Signal peptide | IM | 10 |
| 809b | Seq. ID No. 1695 | Seq. ID No. 1696 | Non-secretory protein | IM | 4 |
| 820a | Seq. ID No. 1703 | Seq. ID No. 1704 | Non-secretory protein | IM | 0 |
| 820b | Seq. ID No. 1705 | Seq. ID No. 1706 | Non-secretory protein | IM | 0 |
| 837a | Seq. ID No. 1731 | Seq. ID No. 1732 | Signal peptide | IM | 2 |
| 853a | Seq. ID No. 1753 | Seq. ID No. 1754 | Signal peptide | IM | 3 |
| 854 | Seq. ID No. 1759 | Seq. ID No. 1760 | Non-secretory protein | IM | 2 |
| 857 | Seq. ID No. 1763 | Seq. ID No. 1764 | Non-secretory protein | Peri | 1 |
| 868a | Seq. ID No. 1787 | Seq. ID No. 1788 | Signal peptide | IM | 3 |

TABLE 4: SIGNALP: YES

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | HMMSignalP | PSORT | MSD |
|---------------|----------------------|--------------------------|-----------------------|-------|-----|
| 873c | Seq. ID No. 1797 | Seq. ID No. 1798 | Signal peptide | OM | 1 |
| 886 | Seq. ID No. 1821 | Seq. ID No. 1822 | Signal peptide | OM | 1 |
| 887 | Seq. ID No. 1823 | Seq. ID No. 1824 | Signal peptide | IM | 1 |
| 904 | Seq. ID No. 1833 | Seq. ID No. 1834 | Non-secretory protein | Peri | |
| 908a | Seq. ID No. 1839 | Seq. ID No. 1840 | Signal peptide | IM | 6 |
| 908b | Seq. ID No. 1841 | Seq. ID No. 1842 | Non-secretory protein | IM | 9 |
| 908c | Seq. ID No. 1843 | Seq. ID No. 1844 | Non-secretory protein | IM | 9 |
| 939b | Seq. ID No. 1893 | Seq. ID No. 1894 | Signal peptide | IM | 10 |
| 951a | Seq. ID No. 1917 | Seq. ID No. 1918 | Signal peptide | OM | 0 |
| 951b | Seq. ID No. 1919 | Seq. ID No. 1920 | Signal peptide | IM | 0 |
| 977b | Seq. ID No. 1971 | Seq. ID No. 1972 | Non-secretory protein | Cyto | 1 |
| 987 | Seq. ID No. 1991 | Seq. ID No. 1992 | Signal peptide | IM | 5 |
| 998a | Seq. ID No. 2013 | Seq. ID No. 2014 | Signal peptide | IM | 5 |
| 998b | Seq. ID No. 2015 | Seq. ID No. 2016 | Non-secretory protein | IM | 5 |
| 999a | Seq. ID No. 2017 | Seq. ID No. 2018 | Signal peptide | IM | 2 |
| 999b | Seq. ID No. 2019 | Seq. ID No. 2020 | Signal peptide | IM | 2 |
| 1006a | Seq. ID No. 2033 | Seq. ID No. 2034 | Signal peptide | Peri | 1 |
| 1006b | Seq. ID No. 2035 | Seq. ID No. 2036 | Signal peptide | Cyto | 1 |
| 1017a | Seq. ID No. 2049 | Seq. ID No. 2050 | Signal peptide | IM | 4 |
| 1035a | Seq. ID No. 2081 | Seq. ID No. 2082 | Non-secretory protein | IM | 1 |
| 1035b | Seq. ID No. 2083 | Seq. ID No. 2084 | Non-secretory protein | IM | 1 |
| 1035c | Seq. ID No. 2085 | Seq. ID No. 2086 | Non-secretory protein | IM | 1 |
| 1044d | Seq. ID No. 2111 | Seq. ID No. 2112 | Non-secretory protein | IM | 3 |
| 1047a | Seq. ID No. 2113 | Seq. ID No. 2114 | Signal peptide | OM | 1 |
| 1050b | Seq. ID No. 2123 | Seq. ID No. 2124 | Signal peptide | IM | 7 |
| 1050c | Seq. ID No. 2125 | Seq. ID No. 2126 | Signal peptide | IM | 7 |
| 1050d | Seq. ID No. 2127 | Seq. ID No. 2128 | Signal peptide | IM | 7 |
| 1056a | Seq. ID No. 2131 | Seq. ID No. 2132 | Non-secretory protein | Cyto | |
| 1056b | Seq. ID No. 2133 | Seq. ID No. 2134 | Non-secretory protein | Cyto | |

TABLE 4: SIGNALP: YES

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | HMMSignalP | PSORT | MSD |
|---------------|----------------------|--------------------------|-----------------------|-------|-----|
| 1065c | Seq. ID No. 2153 | Seq. ID No. 2154 | Non-secretory protein | IM | 1 |
| 1069 | Seq. ID No. 2161 | Seq. ID No. 2162 | Non-secretory protein | IM | 1 |
| 1077a | Seq. ID No. 2171 | Seq. ID No. 2172 | Signal peptide | IM | 3 |
| 1077c | Seq. ID No. 2175 | Seq. ID No. 2176 | Non-secretory protein | IM | 12 |
| 1077e | Seq. ID No. 2179 | Seq. ID No. 2180 | Non-secretory protein | IM | 15 |
| 1081a | Seq. ID No. 2187 | Seq. ID No. 2188 | Signal peptide | Peri | 1 |
| 1091a | Seq. ID No. 2201 | Seq. ID No. 2202 | Non-secretory protein | Cyto | |
| 1091b | Seq. ID No. 2203 | Seq. ID No. 2204 | Non-secretory protein | Peri | |
| 1098b | Seq. ID No. 2221 | Seq. ID No. 2222 | Non-secretory protein | IM | 2 |
| 1111a | Seq. ID No. 2237 | Seq. ID No. 2238 | Signal peptide | IM | 6 |
| 1126b | Seq. ID No. 2249 | Seq. ID No. 2250 | Signal peptide | IM | 4 |
| 1126c | Seq. ID No. 2251 | Seq. ID No. 2252 | Signal peptide | IM | 4 |
| 1128 | Seq. ID No. 2255 | Seq. ID No. 2256 | Signal peptide | IM | 2 |
| 1135a | Seq. ID No. 2261 | Seq. ID No. 2262 | Non-secretory protein | IM | 1 |
| 1135b | Seq. ID No. 2263 | Seq. ID No. 2264 | Non-secretory protein | IM | 1 |
| 1140a | Seq. ID No. 2271 | Seq. ID No. 2272 | Signal peptide | IM | 2 |
| 1141b | Seq. ID No. 2279 | Seq. ID No. 2280 | Non-secretory protein | Cyto | 1 |
| 1144a | Seq. ID No. 2283 | Seq. ID No. 2284 | Signal peptide | IM | 2 |
| 1144b | Seq. ID No. 2285 | Seq. ID No. 2286 | Non-secretory protein | IM | 4 |
| 1146a | Seq. ID No. 2289 | Seq. ID No. 2290 | Signal peptide | IM | 3 |
| 1146d | Seq. ID No. 2295 | Seq. ID No. 2296 | Signal peptide | IM | 8 |
| 1152b | Seq. ID No. 2305 | Seq. ID No. 2306 | Signal peptide | IM | 5 |
| 1152c | Seq. ID No. 2307 | Seq. ID No. 2308 | Signal peptide | IM | 6 |
| 1155a | Seq. ID No. 2317 | Seq. ID No. 2318 | Signal peptide | IM | 3 |
| 1155b | Seq. ID No. 2319 | Seq. ID No. 2320 | Signal peptide | IM | 4 |
| 1155d | Seq. ID No. 2323 | Seq. ID No. 2324 | Signal peptide | IM | 6 |
| 1155e | Seq. ID No. 2325 | Seq. ID No. 2326 | Signal peptide | IM | 9 |
| 1165 | Seq. ID No. 2343 | Seq. ID No. 2344 | Signal peptide | OM | 1 |
| 1167b | Seq. ID No. 2349 | Seq. ID No. 2350 | Signal peptide | IM | 2 |

TABLE 4: SIGNALP: YES

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | HMMSignalP | PSORT | MSD |
|---------------|----------------------|--------------------------|-----------------------|-------|-----|
| 1180b | Seq. ID No. 2385 | Seq. ID No. 2386 | Non-secretory protein | IM | 2 |
| 1182a | Seq. ID No. 2393 | Seq. ID No. 2394 | Signal peptide | IM | 1 |
| 1194 | Seq. ID No. 2423 | Seq. ID No. 2424 | Non-secretory protein | IM | 1 |
| 1209 | Seq. ID No. 2453 | Seq. ID No. 2454 | Non-secretory protein | IM | 4 |
| 1224c | Seq. ID No. 2491 | Seq. ID No. 2492 | Signal peptide | IM | 6 |
| 1228a | Seq. ID No. 2497 | Seq. ID No. 2498 | Signal peptide | IM | 1 |
| 1228b | Seq. ID No. 2499 | Seq. ID No. 2500 | Signal peptide | IM | 2 |
| 1231 | Seq. ID No. 2507 | Seq. ID No. 2508 | Signal peptide | OM | 1 |
| 1234a | Seq. ID No. 2515 | Seq. ID No. 2516 | Signal peptide | IM | 4 |
| 1234b | Seq. ID No. 2517 | Seq. ID No. 2518 | Signal peptide | IM | 4 |
| 1235 | Seq. ID No. 2521 | Seq. ID No. 2522 | Non-secretory protein | Cyto | 1 |
| 1236a | Seq. ID No. 2523 | Seq. ID No. 2524 | Signal peptide | IM | 2 |
| 1239 | Seq. ID No. 2527 | Seq. ID No. 2528 | Signal peptide | OM | 1 |
| 1241b | Seq. ID No. 2533 | Seq. ID No. 2534 | Signal peptide | IM | 7 |
| 1241c | Seq. ID No. 2535 | Seq. ID No. 2536 | Signal peptide | IM | 7 |
| 1245a | Seq. ID No. 2541 | Seq. ID No. 2542 | Signal peptide | IM | 6 |
| 1245b | Seq. ID No. 2543 | Seq. ID No. 2544 | Signal peptide | IM | 10 |
| 1245d | Seq. ID No. 2547 | Seq. ID No. 2548 | Non-secretory protein | IM | 12 |
| 1245e | Seq. ID No. 2549 | Seq. ID No. 2550 | Non-secretory protein | IM | 12 |
| 1250b | Seq. ID No. 2557 | Seq. ID No. 2558 | Signal peptide | IM | 8 |
| 1253c | Seq. ID No. 2573 | Seq. ID No. 2574 | Non-secretory protein | IM | 7 |
| 1258a | Seq. ID No. 2583 | Seq. ID No. 2584 | Signal peptide | IM | 5 |
| 1267a | Seq. ID No. 2601 | Seq. ID No. 2602 | Signal peptide | IM | 2 |
| 1267b | Seq. ID No. 2603 | Seq. ID No. 2604 | Non-secretory protein | IM | 3 |
| 1275a | Seq. ID No. 2621 | Seq. ID No. 2622 | Signal peptide | Cyto | 1 |
| 1289 | Seq. ID No. 2653 | Seq. ID No. 2654 | Non-secretory protein | IM | 1 |
| 1308b | Seq. ID No. 2681 | Seq. ID No. 2682 | Signal peptide | IM | 4 |
| 1314b | Seq. ID No. 2691 | Seq. ID No. 2692 | Signal peptide | IM | 1 |
| 1319a | Seq. ID No. 2701 | Seq. ID No. 2702 | Signal peptide | IM | 4 |

TABLE 4: SIGNALP: YES

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | HMMSignalP | PSORT | MSD |
|---------------|----------------------|--------------------------|-----------------------|-------|-----|
| 1335a | Seq. ID No. 2733 | Seq. ID No. 2734 | Signal peptide | OM | 2 |
| 1338 | Seq. ID No. 2739 | Seq. ID No. 2740 | Non-secretory protein | IM | 1 |
| 1375 | Seq. ID No. 2801 | Seq. ID No. 2802 | Signal peptide | Cyto | 0 |
| 1379 | Seq. ID No. 2807 | Seq. ID No. 2808 | Non-secretory protein | IM | 1 |
| 1382 | Seq. ID No. 2815 | Seq. ID No. 2816 | Signal peptide | OM | 1 |
| 1384a | Seq. ID No. 2819 | Seq. ID No. 2820 | Signal peptide | IM | 2 |
| 1384b | Seq. ID No. 2821 | Seq. ID No. 2822 | Signal peptide | IM | 2 |
| 1384c | Seq. ID No. 2823 | Seq. ID No. 2824 | Signal peptide | IM | 2 |
| 1389a | Seq. ID No. 2833 | Seq. ID No. 2834 | Signal peptide | Cyto | 0 |
| 1393b | Seq. ID No. 2837 | Seq. ID No. 2838 | Signal peptide | IM | 2 |
| 1393c | Seq. ID No. 2839 | Seq. ID No. 2840 | Signal peptide | IM | 3 |
| 1395a | Seq. ID No. 2845 | Seq. ID No. 2846 | Signal peptide | Cyto | |
| 1399a | Seq. ID No. 2853 | Seq. ID No. 2854 | Signal peptide | IM | 2 |
| 1402c | Seq. ID No. 2861 | Seq. ID No. 2862 | Signal peptide | IM | 2 |
| 1407b | Seq. ID No. 2865 | Seq. ID No. 2866 | Non-secretory protein | IM | 1 |
| 1411a | Seq. ID No. 2873 | Seq. ID No. 2874 | Signal peptide | IM | 3 |
| 1411b | Seq. ID No. 2875 | Seq. ID No. 2876 | Non-secretory protein | IM | 4 |
| 1411c | Seq. ID No. 2877 | Seq. ID No. 2878 | Non-secretory protein | IM | 6 |
| 1414a | Seq. ID No. 2883 | Seq. ID No. 2884 | Non-secretory protein | IM | 0 |
| 1419 | Seq. ID No. 2895 | Seq. ID No. 2896 | Non-secretory protein | IM | |
| 1426a | Seq. ID No. 2905 | Seq. ID No. 2906 | Signal peptide | IM | 4 |
| 1439b | Seq. ID No. 2939 | Seq. ID No. 2940 | Signal peptide | IM | 5 |
| 1439c | Seq. ID No. 2941 | Seq. ID No. 2942 | Signal peptide | IM | 6 |
| 1440a | Seq. ID No. 2947 | Seq. ID No. 2948 | Signal peptide | IM | 6 |
| 1452a | Seq. ID No. 2981 | Seq. ID No. 2982 | Signal peptide | IM | 4 |
| 1452b | Seq. ID No. 2983 | Seq. ID No. 2984 | Signal peptide | IM | 4 |
| 1454 | Seq. ID No. 2987 | Seq. ID No. 2988 | Signal peptide | Cyto | 1 |
| 1455b | Seq. ID No. 2991 | Seq. ID No. 2992 | Signal peptide | OM | 1 |
| 1457a | Seq. ID No. 2995 | Seq. ID No. 2996 | Signal peptide | IM | 3 |

TABLE 4: SIGNALP: YES

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | HMMSignalP | PSORT | MSD |
|---------------|----------------------|--------------------------|-----------------------|-------|-----|
| 1459 | Seq. ID No. 3001 | Seq. ID No. 3002 | Non-secretory protein | IM | 1 |
| 1462b | Seq. ID No. 3005 | Seq. ID No. 3006 | Signal peptide | IM | 6 |
| 1467 | Seq. ID No. 3021 | Seq. ID No. 3022 | Non-secretory protein | Cyto | 2 |
| 1469b | Seq. ID No. 3025 | Seq. ID No. 3026 | Signal peptide | IM | 5 |
| 1475 | Seq. ID No. 3043 | Seq. ID No. 3044 | Signal peptide | OM | 1 |
| 1476 | Seq. ID No. 3045 | Seq. ID No. 3046 | Non-secretory protein | IM | 5 |
| 1488a | Seq. ID No. 3073 | Seq. ID No. 3074 | Signal peptide | IM | 1 |
| 1488b | Seq. ID No. 3075 | Seq. ID No. 3076 | Signal peptide | IM | 2 |
| 1520 | Seq. ID No. 3155 | Seq. ID No. 3156 | Signal peptide | Peri | 1 |
| 1530a | Seq. ID No. 3163 | Seq. ID No. 3164 | Signal peptide | OM | 1 |
| 1530b | Seq. ID No. 3165 | Seq. ID No. 3166 | Signal peptide | IM | 1 |
| 1533a | Seq. ID No. 3167 | Seq. ID No. 3168 | Non-secretory protein | IM | 0 |
| 1543 | Seq. ID No. 3183 | Seq. ID No. 3184 | Signal peptide | OM | 1 |
| 1557a | Seq. ID No. 3213 | Seq. ID No. 3214 | Signal peptide | IM | 4 |
| 1557b | Seq. ID No. 3215 | Seq. ID No. 3216 | Signal peptide | IM | 5 |
| 1569 | Seq. ID No. 3235 | Seq. ID No. 3236 | Non-secretory protein | IM | 2 |
| 1572c | Seq. ID No. 3245 | Seq. ID No. 3246 | Signal peptide | IM | 10 |
| 1580a | Seq. ID No. 3261 | Seq. ID No. 3262 | Signal peptide | IM | 1 |
| 1580b | Seq. ID No. 3263 | Seq. ID No. 3264 | Signal peptide | IM | 1 |
| 1581 | Seq. ID No. 3265 | Seq. ID No. 3266 | Non-secretory protein | IM | 1 |
| 1582b | Seq. ID No. 3269 | Seq. ID No. 3270 | Signal peptide | IM | 1 |
| 1582c | Seq. ID No. 3271 | Seq. ID No. 3272 | Non-secretory protein | IM | 1 |
| 1585a | Seq. ID No. 3275 | Seq. ID No. 3276 | Signal peptide | IM | 1 |
| 1585b | Seq. ID No. 3277 | Seq. ID No. 3278 | Signal peptide | IM | 1 |
| 1606a | Seq. ID No. 3317 | Seq. ID No. 3318 | Signal peptide | IM | 1 |
| 1608 | Seq. ID No. 3325 | Seq. ID No. 3326 | Signal peptide | Cyto | 1 |
| 1619 | Seq. ID No. 3337 | Seq. ID No. 3338 | Signal peptide | OM | 1 |
| 1625a | Seq. ID No. 3351 | Seq. ID No. 3352 | Signal peptide | IM | 4 |
| 1646a | Seq. ID No. 3389 | Seq. ID No. 3390 | Signal peptide | IM | 2 |

TABLE 4: SIGNALP: YES

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | HMMSignalP | PSORT | MSD |
|---------------|----------------------|--------------------------|-----------------------|-------|-----|
| 1649a | Seq. ID No. 3405 | Seq. ID No. 3406 | Signal peptide | Peri | 2 |
| 1657 | Seq. ID No. 3419 | Seq. ID No. 3420 | Non-secretory protein | Cyto | |
| 1659a | Seq. ID No. 3421 | Seq. ID No. 3422 | Signal peptide | OM | 1 |
| 1659b | Seq. ID No. 3423 | Seq. ID No. 3424 | Non-secretory protein | IM | 9 |
| 1673b | Seq. ID No. 3451 | Seq. ID No. 3452 | Signal peptide | IM | 8 |
| 1673c | Seq. ID No. 3453 | Seq. ID No. 3454 | Signal peptide | IM | 10 |
| 1673d | Seq. ID No. 3455 | Seq. ID No. 3456 | Signal peptide | IM | 12 |
| 1688a | Seq. ID No. 3491 | Seq. ID No. 3492 | Signal peptide | IM | 3 |
| 1688c | Seq. ID No. 3495 | Seq. ID No. 3496 | Non-secretory protein | IM | 11 |
| 1690a | Seq. ID No. 3503 | Seq. ID No. 3504 | Signal peptide | IM | 1 |
| 1690b | Seq. ID No. 3505 | Seq. ID No. 3506 | Signal peptide | IM | 2 |
| 1694c | Seq. ID No. 3517 | Seq. ID No. 3518 | Signal peptide | IM | 1 |
| 1694d | Seq. ID No. 3519 | Seq. ID No. 3520 | Signal peptide | IM | 1 |
| 1705a | Seq. ID No. 3545 | Seq. ID No. 3546 | Non-secretory protein | Cyto | |
| 1705b | Seq. ID No. 3547 | Seq. ID No. 3548 | Non-secretory protein | Cyto | |
| 1718a | Seq. ID No. 3571 | Seq. ID No. 3572 | Non-secretory protein | Cyto | |
| 1735a | Seq. ID No. 3593 | Seq. ID No. 3594 | Signal peptide | OM | 1 |
| 1745 | Seq. ID No. 3617 | Seq. ID No. 3618 | Signal peptide | Peri | 0 |
| 1749a | Seq. ID No. 3621 | Seq. ID No. 3622 | Signal peptide | IM | 3 |
| 1752b | Seq. ID No. 3629 | Seq. ID No. 3630 | Signal peptide | Peri | 1 |
| 1769b | Seq. ID No. 3663 | Seq. ID No. 3664 | Non-secretory protein | IM | 7 |
| 1790a | Seq. ID No. 3701 | Seq. ID No. 3702 | Non-secretory protein | Cyto | 2 |
| 1790b | Seq. ID No. 3703 | Seq. ID No. 3704 | Non-secretory protein | Cyto | 3 |
| 1798a | Seq. ID No. 3723 | Seq. ID No. 3724 | Signal peptide | IM | 2 |
| 1804a | Seq. ID No. 3737 | Seq. ID No. 3738 | Non-secretory protein | IM | 2 |
| 1805 | Seq. ID No. 3741 | Seq. ID No. 3742 | Signal peptide | IM | 3 |
| 1806b | Seq. ID No. 3745 | Seq. ID No. 3746 | Signal peptide | IM | 5 |
| 1806c | Seq. ID No. 3747 | Seq. ID No. 3748 | Non-secretory protein | IM | 5 |
| 1808d | Seq. ID No. 3759 | Seq. ID No. 3760 | Non-secretory protein | IM | 15 |

TABLE 4: SIGNALP: YES

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | HMMSignalP | PSORT | MSD |
|---------------|----------------------|--------------------------|-----------------------|-------|-----|
| 1809b | Seq. ID No. 3763 | Seq. ID No. 3764 | Signal peptide | IM | 7 |
| 1809d | Seq. ID No. 3767 | Seq. ID No. 3768 | Non-secretory protein | IM | 12 |
| 1809e | Seq. ID No. 3769 | Seq. ID No. 3770 | Non-secretory protein | IM | 14 |
| 1809f | Seq. ID No. 3771 | Seq. ID No. 3772 | Non-secretory protein | IM | 14 |
| 1813 | Seq. ID No. 3785 | Seq. ID No. 3786 | Non-secretory protein | IM | 1 |
| 1816a | Seq. ID No. 3793 | Seq. ID No. 3794 | Signal peptide | Peri | 1 |
| 1825 | Seq. ID No. 3813 | Seq. ID No. 3814 | Signal peptide | IM | 2 |
| 1838a | Seq. ID No. 3837 | Seq. ID No. 3838 | Signal peptide | IM | 3 |
| 1838b | Seq. ID No. 3839 | Seq. ID No. 3840 | Signal peptide | IM | 4 |
| 1845b | Seq. ID No. 3861 | Seq. ID No. 3862 | Signal peptide | IM | 8 |
| 1848a | Seq. ID No. 3865 | Seq. ID No. 3866 | Signal peptide | IM | 7 |
| 1857b | Seq. ID No. 3889 | Seq. ID No. 3890 | Signal peptide | IM | 5 |
| 1857c | Seq. ID No. 3891 | Seq. ID No. 3892 | Signal peptide | IM | 6 |
| 1858 | Seq. ID No. 3895 | Seq. ID No. 3896 | Signal peptide | Cyto | 0 |
| 1868 | Seq. ID No. 3915 | Seq. ID No. 3916 | Signal peptide | IM | 1 |
| 1873b | Seq. ID No. 3923 | Seq. ID No. 3924 | Signal peptide | Peri | 1 |
| 1873c | Seq. ID No. 3925 | Seq. ID No. 3926 | Signal peptide | Peri | 1 |
| 1875c | Seq. ID No. 3929 | Seq. ID No. 3930 | Non-secretory protein | IM | 1 |
| 1896b | Seq. ID No. 3965 | Seq. ID No. 3966 | Non-secretory protein | IM | 2 |
| 1898b | Seq. ID No. 3975 | Seq. ID No. 3976 | Signal peptide | IM | 4 |
| 1900 | Seq. ID No. 3979 | Seq. ID No. 3980 | Non-secretory protein | Cyto | 1 |
| 1917a | Seq. ID No. 3995 | Seq. ID No. 3996 | Signal peptide | IM | 0 |
| 1917b | Seq. ID No. 3997 | Seq. ID No. 3998 | Signal peptide | IM | 0 |
| 1919c | Seq. ID No. 4009 | Seq. ID No. 4010 | Signal peptide | IM | 1 |
| 1936 | Seq. ID No. 4039 | Seq. ID No. 4040 | Signal peptide | IM | 6 |
| 1937a | Seq. ID No. 4041 | Seq. ID No. 4042 | Signal peptide | IM | 2 |
| 1941b | Seq. ID No. 4061 | Seq. ID No. 4062 | Signal peptide | IM | 4 |
| 1950 | Seq. ID No. 4079 | Seq. ID No. 4080 | Signal peptide | OM | 1 |
| 1951a | Seq. ID No. 4081 | Seq. ID No. 4082 | Signal peptide | IM | 3 |

TABLE 4: SIGNALP: YES

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | HMMSignalP | PSORT | MSD |
|---------------|----------------------|--------------------------|-----------------------|-------|-----|
| 1960c | Seq. ID No. 4111 | Seq. ID No. 4112 | Signal peptide | IM | 1 |
| 1961 | Seq. ID No. 4113 | Seq. ID No. 4114 | Non-secretory protein | IM | 1 |
| 1972 | Seq. ID No. 4135 | Seq. ID No. 4136 | Signal peptide | Cyto | 1 |
| 1976 | Seq. ID No. 4139 | Seq. ID No. 4140 | Signal peptide | IM | 1 |
| 1981 | Seq. ID No. 4155 | Seq. ID No. 4156 | Non-secretory protein | Cyto | 1 |
| 1991 | Seq. ID No. 4181 | Seq. ID No. 4182 | Signal peptide | Cyto | 1 |
| 2008 | Seq. ID No. 4203 | Seq. ID No. 4204 | Non-secretory protein | IM | 2 |
| 2016a | Seq. ID No. 4221 | Seq. ID No. 4222 | Signal peptide | IM | 2 |
| 2024b | Seq. ID No. 4247 | Seq. ID No. 4248 | Signal peptide | IM | 2 |
| 2025 | Seq. ID No. 4253 | Seq. ID No. 4254 | Signal peptide | OM | 1 |
| 2030a | Seq. ID No. 4257 | Seq. ID No. 4258 | Signal peptide | IM | 4 |
| 2030b | Seq. ID No. 4259 | Seq. ID No. 4260 | Signal peptide | IM | 5 |
| 2030c | Seq. ID No. 4261 | Seq. ID No. 4262 | Signal peptide | IM | 5 |
| 2030d | Seq. ID No. 4263 | Seq. ID No. 4264 | Signal peptide | IM | 5 |
| 2035b | Seq. ID No. 4269 | Seq. ID No. 4270 | Signal peptide | Cyto | 0 |
| 2059a | Seq. ID No. 4311 | Seq. ID No. 4312 | Signal peptide | IM | 2 |
| 2092 | Seq. ID No. 4379 | Seq. ID No. 4380 | Signal peptide | IM | 2 |
| 2096c | Seq. ID No. 4389 | Seq. ID No. 4390 | Signal peptide | IM | 10 |
| 2096d | Seq. ID No. 4391 | Seq. ID No. 4392 | Signal peptide | IM | 10 |
| 2140b | Seq. ID No. 4471 | Seq. ID No. 4472 | Non-secretory protein | IM | 5 |
| 2142a | Seq. ID No. 4473 | Seq. ID No. 4474 | Signal peptide | IM | 1 |
| 2146 | Seq. ID No. 4481 | Seq. ID No. 4482 | Signal peptide | OM | 1 |
| 2161a | Seq. ID No. 4525 | Seq. ID No. 4526 | Non-secretory protein | Cyto | 1 |
| 2175 | Seq. ID No. 4551 | Seq. ID No. 4552 | Non-secretory protein | IM | 2 |
| 2177b | Seq. ID No. 4561 | Seq. ID No. 4562 | Non-secretory protein | IM | 1 |
| 2182 | Seq. ID No. 4573 | Seq. ID No. 4574 | Non-secretory protein | IM | 1 |
| 2208a | Seq. ID No. 4617 | Seq. ID No. 4618 | Non-secretory protein | Cyto | 0 |
| 2219a | Seq. ID No. 4639 | Seq. ID No. 4640 | Signal peptide | IM | 1 |
| 2225 | Seq. ID No. 4659 | Seq. ID No. 4660 | Signal peptide | OM | 0 |

TABLE 4: SIGNALP: YES

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | HMMSignalP | PSORT | MSD |
|---------------|----------------------|--------------------------|-----------------------|-------|-----|
| 2236a | Seq. ID No. 4681 | Seq. ID No. 4682 | Signal peptide | IM | 2 |
| 2246 | Seq. ID No. 4701 | Seq. ID No. 4702 | Non-secretory protein | IM | |
| 2249 | Seq. ID No. 4705 | Seq. ID No. 4706 | Signal peptide | OM | 1 |
| 2253d | Seq. ID No. 4713 | Seq. ID No. 4714 | Non-secretory protein | IM | 7 |
| 2255b | Seq. ID No. 4717 | Seq. ID No. 4718 | Signal peptide | IM | 6 |
| 2257 | Seq. ID No. 4721 | Seq. ID No. 4722 | Non-secretory protein | IM | 0 |
| 2264b | Seq. ID No. 4737 | Seq. ID No. 4738 | Signal peptide | IM | 1 |
| 2268 | Seq. ID No. 4741 | Seq. ID No. 4742 | Non-secretory protein | Cyto | 0 |
| 2300 | Seq. ID No. 4813 | Seq. ID No. 4814 | Signal peptide | IM | 4 |
| 2302 | Seq. ID No. 4817 | Seq. ID No. 4818 | Non-secretory protein | IM | 1 |
| 2303 | Seq. ID No. 4819 | Seq. ID No. 4820 | Non-secretory protein | IM | 1 |
| 2309a | Seq. ID No. 4829 | Seq. ID No. 4830 | Non-secretory protein | IM | 2 |
| 2309b | Seq. ID No. 4831 | Seq. ID No. 4832 | Non-secretory protein | IM | 2 |
| 2317 | Seq. ID No. 4851 | Seq. ID No. 4852 | Non-secretory protein | IM | 2 |
| 2329a | Seq. ID No. 4869 | Seq. ID No. 4870 | Signal peptide | IM | 1 |
| 2329d | Seq. ID No. 4875 | Seq. ID No. 4876 | Signal peptide | IM | 7 |
| 2350a | Seq. ID No. 4913 | Seq. ID No. 4914 | Non-secretory protein | Cyto | |
| 2357 | Seq. ID No. 4919 | Seq. ID No. 4920 | Signal peptide | IM | 2 |
| 2363a | Seq. ID No. 4929 | Seq. ID No. 4930 | Signal peptide | IM | 1 |
| 2363b | Seq. ID No. 4931 | Seq. ID No. 4932 | Signal peptide | IM | 1 |
| 2386c | Seq. ID No. 4983 | Seq. ID No. 4984 | Non-secretory protein | IM | 0 |
| 2394 | Seq. ID No. 4993 | Seq. ID No. 4994 | Non-secretory protein | IM | 1 |
| 2402a | Seq. ID No. 5011 | Seq. ID No. 5012 | Non-secretory protein | IM | 1 |
| 2407a | Seq. ID No. 5023 | Seq. ID No. 5024 | Non-secretory protein | IM | 0 |
| 2412 | Seq. ID No. 5031 | Seq. ID No. 5032 | Signal peptide | IM | 2 |
| 2413a | Seq. ID No. 5033 | Seq. ID No. 5034 | Non-secretory protein | Cyto | 0 |
| 2413b | Seq. ID No. 5035 | Seq. ID No. 5036 | Non-secretory protein | Peri | 0 |
| 2416c | Seq. ID No. 5043 | Seq. ID No. 5044 | Non-secretory protein | IM | 1 |
| 2423a | Seq. ID No. 5061 | Seq. ID No. 5062 | Signal peptide | IM | 5 |

TABLE 4: SIGNALP: YES

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | HMMSignalP | PSORT | MSD |
|---------------|----------------------|--------------------------|-----------------------|-------|-----|
| 2423b | Seq. ID No. 5063 | Seq. ID No. 5064 | Signal peptide | IM | 5 |
| 2424c | Seq. ID No. 5069 | Seq. ID No. 5070 | Signal peptide | IM | 1 |
| 2445 | Seq. ID No. 5103 | Seq. ID No. 5104 | Signal peptide | IM | 1 |
| 2456b | Seq. ID No. 5121 | Seq. ID No. 5122 | Non-secretory protein | IM | 5 |
| 2456c | Seq. ID No. 5123 | Seq. ID No. 5124 | Signal peptide | IM | 8 |
| 2458b | Seq. ID No. 5131 | Seq. ID No. 5132 | Signal peptide | IM | 6 |
| 2458c | Seq. ID No. 5133 | Seq. ID No. 5134 | Signal peptide | IM | 7 |
| 2458d | Seq. ID No. 5135 | Seq. ID No. 5136 | Signal peptide | IM | 7 |
| 2458e | Seq. ID No. 5137 | Seq. ID No. 5138 | Signal peptide | IM | 8 |
| 2458f | Seq. ID No. 5139 | Seq. ID No. 5140 | Signal peptide | IM | 9 |
| 2458g | Seq. ID No. 5141 | Seq. ID No. 5142 | Signal peptide | IM | 9 |
| 2463a | Seq. ID No. 5151 | Seq. ID No. 5152 | Non-secretory protein | IM | 1 |
| 2468a | Seq. ID No. 5159 | Seq. ID No. 5160 | Signal peptide | IM | 1 |
| 2468b | Seq. ID No. 5161 | Seq. ID No. 5162 | Non-secretory protein | IM | 1 |
| 2469b | Seq. ID No. 5165 | Seq. ID No. 5166 | Signal peptide | IM | 2 |
| 2470 | Seq. ID No. 5167 | Seq. ID No. 5168 | Non-secretory protein | Cyto | 0 |
| 2474b | Seq. ID No. 5175 | Seq. ID No. 5176 | Signal peptide | IM | 3 |
| 2474c | Seq. ID No. 5177 | Seq. ID No. 5178 | Non-secretory protein | IM | 3 |
| 2490 | Seq. ID No. 5205 | Seq. ID No. 5206 | Signal peptide | IM | 1 |
| 2492a | Seq. ID No. 5207 | Seq. ID No. 5208 | Signal peptide | IM | 1 |
| 2494 | Seq. ID No. 5211 | Seq. ID No. 5212 | Non-secretory protein | IM | 0 |
| 2495b | Seq. ID No. 5215 | Seq. ID No. 5216 | Non-secretory protein | IM | 10 |
| 2497b | Seq. ID No. 5219 | Seq. ID No. 5220 | Signal peptide | Peri | 2 |
| 2500a | Seq. ID No. 5223 | Seq. ID No. 5224 | Signal peptide | OM | 1 |
| 2525a | Seq. ID No. 5285 | Seq. ID No. 5286 | Signal peptide | IM | 1 |
| 2525b | Seq. ID No. 5287 | Seq. ID No. 5288 | Non-secretory protein | IM | 1 |
| 2547b | Seq. ID No. 5329 | Seq. ID No. 5330 | Signal peptide | IM | 1 |
| 2547c | Seq. ID No. 5331 | Seq. ID No. 5332 | Signal peptide | IM | 1 |
| 2564b | Seq. ID No. 5377 | Seq. ID No. 5378 | Signal peptide | OM | 1 |

TABLE 4: SIGNALP: YES

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | HMMSignalP | PSORT | MSD |
|---------------|----------------------|--------------------------|-----------------------|-------|-----|
| 2564c | Seq. ID No. 5379 | Seq. ID No. 5380 | Signal peptide | OM | 1 |
| 2564d | Seq. ID No. 5381 | Seq. ID No. 5382 | Non-secretory protein | IM | 1 |
| 2567a | Seq. ID No. 5385 | Seq. ID No. 5386 | Signal peptide | IM | 4 |
| 2582a | Seq. ID No. 5405 | Seq. ID No. 5406 | Signal peptide | IM | 4 |
| 2582b | Seq. ID No. 5407 | Seq. ID No. 5408 | Non-secretory protein | IM | 4 |
| 2610 | Seq. ID No. 5453 | Seq. ID No. 5454 | Signal peptide | IM | 1 |
| 2616a | Seq. ID No. 5459 | Seq. ID No. 5460 | Signal peptide | IM | 2 |
| 2616b | Seq. ID No. 5461 | Seq. ID No. 5462 | Signal peptide | IM | 3 |
| 2616c | Seq. ID No. 5463 | Seq. ID No. 5464 | Signal peptide | IM | 4 |
| 2618b | Seq. ID No. 5481 | Seq. ID No. 5482 | Non-secretory protein | IM | |
| 2628 | Seq. ID No. 5509 | Seq. ID No. 5510 | Signal peptide | IM | 1 |
| 2637a | Seq. ID No. 5529 | Seq. ID No. 5530 | Signal peptide | OM | 1 |
| 2637b | Seq. ID No. 5531 | Seq. ID No. 5532 | Signal peptide | IM | 1 |
| 2655b | Seq. ID No. 5557 | Seq. ID No. 5558 | Non-secretory protein | IM | 1 |
| 2660 | Seq. ID No. 5569 | Seq. ID No. 5570 | Signal peptide | Peri | 1 |
| 2665 | Seq. ID No. 5577 | Seq. ID No. 5578 | Non-secretory protein | IM | 1 |
| 2683a | Seq. ID No. 5623 | Seq. ID No. 5624 | Signal peptide | IM | 1 |
| 2683b | Seq. ID No. 5625 | Seq. ID No. 5626 | Signal peptide | IM | 1 |
| 2690a | Seq. ID No. 5643 | Seq. ID No. 5644 | Signal peptide | Peri | 1 |
| 2696a | Seq. ID No. 5659 | Seq. ID No. 5660 | Signal peptide | IM | 8 |
| 2696b | Seq. ID No. 5661 | Seq. ID No. 5662 | Non-secretory protein | IM | 8 |
| 2718b | Seq. ID No. 5683 | Seq. ID No. 5684 | Signal peptide | IM | 3 |
| 2718c | Seq. ID No. 5685 | Seq. ID No. 5686 | Signal peptide | IM | 4 |
| 2728a | Seq. ID No. 5709 | Seq. ID No. 5710 | Signal peptide | IM | 1 |
| 2728b | Seq. ID No. 5711 | Seq. ID No. 5712 | Signal peptide | IM | 1 |
| 2738c | Seq. ID No. 5733 | Seq. ID No. 5734 | Signal peptide | IM | 12 |
| 2742b | Seq. ID No. 5739 | Seq. ID No. 5740 | Signal peptide | Peri | |
| 2749b | Seq. ID No. 5765 | Seq. ID No. 5766 | Signal peptide | IM | 4 |
| 2760a | Seq. ID No. 5797 | Seq. ID No. 5798 | Signal peptide | Peri | 1 |

TABLE 4: SIGNALP: YES

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | HMMSignalP | PSORT | MSD |
|---------------|----------------------|--------------------------|-----------------------|-------|-----|
| 2769a | Seq. ID No. 5827 | Seq. ID No. 5828 | Non-secretory protein | IM | 0 |
| 2799a | Seq. ID No. 5889 | Seq. ID No. 5890 | Signal peptide | OM | 1 |
| 2801a | Seq. ID No. 5893 | Seq. ID No. 5894 | Signal peptide | IM | 1 |
| 2810a | Seq. ID No. 5905 | Seq. ID No. 5906 | Signal peptide | IM | 3 |
| 2810c | Seq. ID No. 5909 | Seq. ID No. 5910 | Signal peptide | IM | 4 |
| 2810d | Seq. ID No. 5911 | Seq. ID No. 5912 | Non-secretory protein | IM | 4 |
| 2818b | Seq. ID No. 5923 | Seq. ID No. 5924 | Signal peptide | IM | 5 |
| 2837a | Seq. ID No. 5963 | Seq. ID No. 5964 | Non-secretory protein | IM | 2 |
| 2837b | Seq. ID No. 5965 | Seq. ID No. 5966 | Non-secretory protein | IM | 3 |
| 2869b | Seq. ID No. 6025 | Seq. ID No. 6026 | Signal peptide | OM | 1 |
| 2869c | Seq. ID No. 6027 | Seq. ID No. 6028 | Signal peptide | IM | 1 |
| 2872 | Seq. ID No. 6031 | Seq. ID No. 6032 | Non-secretory protein | Cyto | |
| 2881 | Seq. ID No. 6043 | Seq. ID No. 6044 | Signal peptide | IM | 1 |
| 2882 | Seq. ID No. 6045 | Seq. ID No. 6046 | Non-secretory protein | IM | 2 |
| 2883a | Seq. ID No. 6047 | Seq. ID No. 6048 | Signal peptide | IM | 6 |
| 2883d | Seq. ID No. 6053 | Seq. ID No. 6054 | Signal peptide | IM | 8 |
| 2887a | Seq. ID No. 6059 | Seq. ID No. 6060 | Signal peptide | Peri | 1 |
| 2909c | Seq. ID No. 6109 | Seq. ID No. 6110 | Signal peptide | IM | 4 |
| 2909d | Seq. ID No. 6111 | Seq. ID No. 6112 | Signal peptide | IM | 4 |
| 2913a | Seq. ID No. 6115 | Seq. ID No. 6116 | Signal peptide | IM | 2 |
| 2913b | Seq. ID No. 6117 | Seq. ID No. 6118 | Signal peptide | IM | 2 |
| 2917 | Seq. ID No. 6127 | Seq. ID No. 6128 | Non-secretory protein | OM | 1 |
| 2920 | Seq. ID No. 6131 | Seq. ID No. 6132 | Non-secretory protein | IM | 2 |
| 2922b | Seq. ID No. 6135 | Seq. ID No. 6136 | Signal peptide | Cyto | 0 |
| 2923a | Seq. ID No. 6137 | Seq. ID No. 6138 | Signal peptide | Cyto | |
| 2931a | Seq. ID No. 6161 | Seq. ID No. 6162 | Signal peptide | IM | 5 |
| 2931c | Seq. ID No. 6165 | Seq. ID No. 6166 | Signal peptide | IM | 13 |
| 2941a | Seq. ID No. 6183 | Seq. ID No. 6184 | Signal peptide | IM | 2 |
| 2943a | Seq. ID No. 6189 | Seq. ID No. 6190 | Signal peptide | IM | 3 |

TABLE 4: SIGNALP: YES

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | HMMSignalP | PSORT | MSD |
|---------------|----------------------|--------------------------|-----------------------|-------|-----|
| 2943b | Seq. ID No. 6191 | Seq. ID No. 6192 | Signal peptide | IM | 5 |
| 2943c | Seq. ID No. 6193 | Seq. ID No. 6194 | Non-secretory protein | IM | 6 |
| 2948c | Seq. ID No. 6207 | Seq. ID No. 6208 | Non-secretory protein | IM | 6 |
| 2948d | Seq. ID No. 6209 | Seq. ID No. 6210 | Signal peptide | IM | 7 |
| 2952 | Seq. ID No. 6217 | Seq. ID No. 6218 | Signal peptide | Cyto | 1 |
| 2955c | Seq. ID No. 6225 | Seq. ID No. 6226 | Signal peptide | IM | 6 |
| 2957 | Seq. ID No. 6235 | Seq. ID No. 6236 | Signal peptide | IM | 4 |
| 2959 | Seq. ID No. 6243 | Seq. ID No. 6244 | Signal peptide | IM | 2 |
| 2962b | Seq. ID No. 6249 | Seq. ID No. 6250 | Signal peptide | IM | 1 |
| 2965a | Seq. ID No. 6253 | Seq. ID No. 6254 | Signal peptide | Cyto | 1 |
| 2966 | Seq. ID No. 6259 | Seq. ID No. 6260 | Signal peptide | IM | 1 |
| 2970a | Seq. ID No. 6265 | Seq. ID No. 6266 | Signal peptide | IM | 1 |
| 2970b | Seq. ID No. 6267 | Seq. ID No. 6268 | Signal peptide | IM | 1 |
| 2974b | Seq. ID No. 6275 | Seq. ID No. 6276 | Signal peptide | IM | 4 |
| 2978a | Seq. ID No. 6283 | Seq. ID No. 6284 | Signal peptide | Peri | 1 |
| 2978b | Seq. ID No. 6285 | Seq. ID No. 6286 | Signal peptide | Peri | 1 |
| 2986b | Seq. ID No. 6303 | Seq. ID No. 6304 | Signal peptide | IM | 7 |
| 2993a | Seq. ID No. 6325 | Seq. ID No. 6326 | Signal peptide | OM | 0 |
| 2993b | Seq. ID No. 6327 | Seq. ID No. 6328 | Signal peptide | OM | 0 |
| 3016a | Seq. ID No. 6363 | Seq. ID No. 6364 | Signal peptide | IM | 4 |
| 3016b | Seq. ID No. 6365 | Seq. ID No. 6366 | Signal peptide | IM | 7 |
| 3016c | Seq. ID No. 6367 | Seq. ID No. 6368 | Non-secretory protein | IM | 7 |
| 3024b | Seq. ID No. 6385 | Seq. ID No. 6386 | Non-secretory protein | Cyto | 1 |
| 3042a | Seq. ID No. 6425 | Seq. ID No. 6426 | Signal peptide | Cyto | 1 |
| 3042b | Seq. ID No. 6427 | Seq. ID No. 6428 | Signal peptide | Cyto | 1 |
| 3043a | Seq. ID No. 6429 | Seq. ID No. 6430 | Signal peptide | IM | 2 |
| 3043b | Seq. ID No. 6431 | Seq. ID No. 6432 | Signal peptide | IM | 2 |
| 3054 | Seq. ID No. 6453 | Seq. ID No. 6454 | Non-secretory protein | Cyto | |
| 3061 | Seq. ID No. 6465 | Seq. ID No. 6466 | Non-secretory protein | Peri | 1 |

TABLE 4: SIGNALP: YES

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | HMMSignalP | PSORT | MSD |
|-----------------------|------------------------------|----------------------------------|-----------------------|--------------|------------|
| 3063a | Seq. ID No. 6469 | Seq. ID No. 6470 | Non-secretory protein | Cyto | 0 |
| 3063b | Seq. ID No. 6471 | Seq. ID No. 6472 | Non-secretory protein | Cyto | 0 |
| 3066 | Seq. ID No. 6479 | Seq. ID No. 6480 | Signal peptide | Cyto | 0 |
| 3095 | Seq. ID No. 6539 | Seq. ID No. 6540 | Non-secretory protein | IM | 1 |
| 3096a | Seq. ID No. 6541 | Seq. ID No. 6542 | Signal peptide | IM | 1 |
| 3107a | Seq. ID No. 6571 | Seq. ID No. 6572 | Signal peptide | OM | 1 |
| 3107b | Seq. ID No. 6573 | Seq. ID No. 6574 | Signal peptide | OM | 2 |
| 3145c | Seq. ID No. 6639 | Seq. ID No. 6640 | Signal peptide | OM | 1 |
| 3147b | Seq. ID No. 6643 | Seq. ID No. 6644 | Signal peptide | IM | 0 |
| 3147c | Seq. ID No. 6645 | Seq. ID No. 6646 | Signal peptide | OM | 0 |

Listed in Table 5 are 936 ORFs that meet the criteria of having a signal peptide based on the HMM SignalP program. Of these ORFs, the PSORT program predicted 71 ORFs to be localized to the periplasm (Peri); 93 ORFs to be localized to the outer membrane (OM); 663 ORFs to be localized to the cytoplasmic inner membrane (IM); and 109 ORFs to be localized to the cytoplasm. Shown for all ORFs is the predicted number of transmembrane domains predicted by the TopPred2 software (listed in the MSD column).

TABLE 5: SIGNALP: SIGNAL PEPTIDE

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | SignalP | PSORT | MSD |
|-----------------------|------------------------------|----------------------------------|----------------|--------------|------------|
| 2a | Seq. ID No. 3 | Seq. ID No. 4 | NO | IM | 3 |
| 4a | Seq. ID No. 7 | Seq. ID No. 8 | Yes | IM | 4 |
| 4b | Seq. ID No. 9 | Seq. ID No. 10 | Maybe | IM | 10 |
| 11 | Seq. ID No. 19 | Seq. ID No. 20 | maybe | Cyto | 0 |
| 13a | Seq. ID No. 21 | Seq. ID No. 22 | NO | Cyto | 0 |
| 21b | Seq. ID No. 31 | Seq. ID No. 32 | maybe | Cyto | 1 |
| 23a | Seq. ID No. 33 | Seq. ID No. 34 | maybe | IM | 1 |
| 38a | Seq. ID No. 45 | Seq. ID No. 46 | yes | OM | 1 |

TABLE 5: SIGNALP: SIGNAL PEPTIDE

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | SignalP | PSORT | MSD |
|---------------|-------------------|--------------------------|---------|-------|-----|
| 38b | Seq. ID No. 47 | Seq. ID No. 48 | yes | OM | 1 |
| 39a | Seq. ID No. 49 | Seq. ID No. 50 | maybe | IM | 4 |
| 40 | Seq. ID No. 53 | Seq. ID No. 54 | yes | IM | 1 |
| 44a | Seq. ID No. 65 | Seq. ID No. 66 | yes | IM | 2 |
| 44b | Seq. ID No. 67 | Seq. ID No. 68 | yes | IM | 2 |
| 51a | Seq. ID No. 85 | Seq. ID No. 86 | maybe | IM | 5 |
| 51b | Seq. ID No. 87 | Seq. ID No. 88 | yes | IM | 9 |
| 61 | Seq. ID No. 105 | Seq. ID No. 106 | NO | Cyto | 2 |
| 62c | Seq. ID No. 111 | Seq. ID No. 112 | NO | IM | 1 |
| 66a | Seq. ID No. 123 | Seq. ID No. 124 | NO | OM | 1 |
| 73a | Seq. ID No. 131 | Seq. ID No. 132 | YES | Cyto | 1 |
| 73b | Seq. ID No. 133 | Seq. ID No. 134 | YES | Cyto | 1 |
| 80a | Seq. ID No. 141 | Seq. ID No. 142 | maybe | IM | 4 |
| 86 | Seq. ID No. 159 | Seq. ID No. 160 | yes | Peri | 1 |
| 87a | Seq. ID No. 161 | Seq. ID No. 162 | YES | OM | 1 |
| 87b | Seq. ID No. 163 | Seq. ID No. 164 | YES | IM | 1 |
| 91a | Seq. ID No. 171 | Seq. ID No. 172 | maybe | OM | 0 |
| 99 | Seq. ID No. 191 | Seq. ID No. 192 | maybe | IM | 10 |
| 109a | Seq. ID No. 209 | Seq. ID No. 210 | maybe | IM | 5 |
| 109b | Seq. ID No. 211 | Seq. ID No. 212 | yes | IM | 7 |
| 109c | Seq. ID No. 213 | Seq. ID No. 214 | YES | IM | 8 |
| 109d | Seq. ID No. 215 | Seq. ID No. 216 | YES | IM | 8 |
| 111a | Seq. ID No. 217 | Seq. ID No. 218 | yes | IM | 6 |
| 114 | Seq. ID No. 225 | Seq. ID No. 226 | YES | OM | 1 |
| 124a | Seq. ID No. 235 | Seq. ID No. 236 | yes | IM | 1 |
| 124b | Seq. ID No. 237 | Seq. ID No. 238 | yes | IM | 3 |
| 129a | Seq. ID No. 249 | Seq. ID No. 250 | YES | IM | 6 |
| 129b | Seq. ID No. 251 | Seq. ID No. 252 | YES | IM | 9 |
| 132a | Seq. ID No. 255 | Seq. ID No. 256 | maybe | IM | 2 |

TABLE 5: SIGNALP: SIGNAL PEPTIDE

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | SignalP | PSORT | MSD |
|-----------------------|--------------------------|----------------------------------|----------------|--------------|------------|
| 132b | Seq. ID No. 257 | Seq. ID No. 258 | maybe | IM | 2 |
| 132c | Seq. ID No. 259 | Seq. ID No. 260 | maybe | IM | 2 |
| 138a | Seq. ID No. 271 | Seq. ID No. 272 | yes | IM | 6 |
| 138b | Seq. ID No. 273 | Seq. ID No. 274 | maybe | IM | 6 |
| 143 | Seq. ID No. 277 | Seq. ID No. 278 | maybe | IM | 2 |
| 145a | Seq. ID No. 285 | Seq. ID No. 286 | yes | IM | 3 |
| 145b | Seq. ID No. 287 | Seq. ID No. 288 | YES | IM | 10 |
| 145c | Seq. ID No. 289 | Seq. ID No. 290 | YES | IM | 12 |
| 162a | Seq. ID No. 327 | Seq. ID No. 328 | yes | IM | 2 |
| 162b | Seq. ID No. 329 | Seq. ID No. 330 | maybe | IM | 3 |
| 173 | Seq. ID No. 357 | Seq. ID No. 358 | maybe | IM | 1 |
| 174 | Seq. ID No. 359 | Seq. ID No. 360 | maybe | Peri | 1 |
| 180a | Seq. ID No. 373 | Seq. ID No. 374 | maybe | IM | 2 |
| 180b | Seq. ID No. 375 | Seq. ID No. 376 | YES | IM | 10 |
| 191b | Seq. ID No. 393 | Seq. ID No. 394 | maybe | IM | 1 |
| 194a | Seq. ID No. 401 | Seq. ID No. 402 | maybe | Cyto | 1 |
| 194b | Seq. ID No. 403 | Seq. ID No. 404 | maybe | Cyto | 1 |
| 223a | Seq. ID No. 455 | Seq. ID No. 456 | yes | Cyto | 1 |
| 223b | Seq. ID No. 457 | Seq. ID No. 458 | yes | Cyto | 1 |
| 235a | Seq. ID No. 477 | Seq. ID No. 478 | maybe | Cyto | 0 |
| 239a | Seq. ID No. 487 | Seq. ID No. 488 | NO | Cyto | 2 |
| 239b | Seq. ID No. 489 | Seq. ID No. 490 | NO | Cyto | 2 |
| 239c | Seq. ID No. 491 | Seq. ID No. 492 | NO | Cyto | 2 |
| 240 | Seq. ID No. 493 | Seq. ID No. 494 | maybe | Cyto | |
| 241 | Seq. ID No. 495 | Seq. ID No. 496 | yes | IM | 1 |
| 245a | Seq. ID No. 497 | Seq. ID No. 498 | YES | IM | 5 |
| 245b | Seq. ID No. 499 | Seq. ID No. 500 | yes | IM | 10 |
| 246a | Seq. ID No. 503 | Seq. ID No. 504 | YES | IM | 7 |
| 246b | Seq. ID No. 505 | Seq. ID No. 506 | YES | IM | 9 |

TABLE 5: SIGNALP: SIGNAL PEPTIDE

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | SignalP | PSORT | MSD |
|---------------|-------------------|--------------------------|---------|-------|-----|
| 248a | Seq. ID No. 509 | Seq. ID No. 510 | maybe | IM | 8 |
| 248b | Seq. ID No. 511 | Seq. ID No. 512 | yes | IM | 9 |
| 249a | Seq. ID No. 513 | Seq. ID No. 514 | yes | OM | 1 |
| 249b | Seq. ID No. 515 | Seq. ID No. 516 | yes | IM | 1 |
| 255a | Seq. ID No. 525 | Seq. ID No. 526 | yes | IM | 6 |
| 255b | Seq. ID No. 527 | Seq. ID No. 528 | YES | IM | 10 |
| 263a | Seq. ID No. 545 | Seq. ID No. 546 | yes | OM | 1 |
| 263b | Seq. ID No. 547 | Seq. ID No. 548 | yes | IM | 1 |
| 264b | Seq. ID No. 549 | Seq. ID No. 550 | YES | IM | 1 |
| 268 | Seq. ID No. 557 | Seq. ID No. 558 | yes | Cyto | 1 |
| 273a | Seq. ID No. 567 | Seq. ID No. 568 | maybe | IM | 8 |
| 273b | Seq. ID No. 569 | Seq. ID No. 570 | yes | IM | 12 |
| 277c | Seq. ID No. 575 | Seq. ID No. 576 | YES | OM | 1 |
| 279a | Seq. ID No. 577 | Seq. ID No. 578 | maybe | IM | 3 |
| 279b | Seq. ID No. 579 | Seq. ID No. 580 | maybe | IM | 5 |
| 283a | Seq. ID No. 591 | Seq. ID No. 592 | yes | OM | 1 |
| 283b | Seq. ID No. 593 | Seq. ID No. 594 | yes | OM | 1 |
| 285b | Seq. ID No. 599 | Seq. ID No. 600 | maybe | Cyto | |
| 297 | Seq. ID No. 617 | Seq. ID No. 618 | YES | Peri | 1 |
| 311 | Seq. ID No. 637 | Seq. ID No. 638 | yes | IM | 6 |
| 313a | Seq. ID No. 639 | Seq. ID No. 640 | yes | IM | 2 |
| 313b | Seq. ID No. 641 | Seq. ID No. 642 | yes | IM | 3 |
| 313c | Seq. ID No. 643 | Seq. ID No. 644 | maybe | IM | 6 |
| 313d | Seq. ID No. 645 | Seq. ID No. 646 | maybe | IM | 6 |
| 313e | Seq. ID No. 647 | Seq. ID No. 648 | maybe | IM | 6 |
| 317a | Seq. ID No. 653 | Seq. ID No. 654 | yes | IM | 2 |
| 317b | Seq. ID No. 655 | Seq. ID No. 656 | maybe | IM | 4 |
| 318a | Seq. ID No. 657 | Seq. ID No. 658 | YES | OM | 2 |
| 318b | Seq. ID No. 659 | Seq. ID No. 660 | YES | OM | 2 |

TABLE 5: SIGNALP: SIGNAL PEPTIDE

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | SignalP | PSORT | MSD |
|---------------|-------------------|--------------------------|---------|-------|-----|
| 318c | Seq. ID No. 661 | Seq. ID No. 662 | YES | IM | 2 |
| 320 | Seq. ID No. 667 | Seq. ID No. 668 | maybe | Cyto | 1 |
| 321 | Seq. ID No. 669 | Seq. ID No. 670 | yes | OM | 1 |
| 324 | Seq. ID No. 675 | Seq. ID No. 676 | YES | OM | 1 |
| 327a | Seq. ID No. 677 | Seq. ID No. 678 | maybe | IM | 3 |
| 327b | Seq. ID No. 679 | Seq. ID No. 680 | yes | IM | 5 |
| 342a | Seq. ID No. 715 | Seq. ID No. 716 | YES | IM | 2 |
| 342b | Seq. ID No. 717 | Seq. ID No. 718 | YES | IM | 3 |
| 342c | Seq. ID No. 719 | Seq. ID No. 720 | yes | IM | 4 |
| 342d | Seq. ID No. 721 | Seq. ID No. 722 | NO | IM | 6 |
| 342e | Seq. ID No. 723 | Seq. ID No. 724 | yes | IM | 10 |
| 342f | Seq. ID No. 725 | Seq. ID No. 726 | NO | IM | 12 |
| 349b | Seq. ID No. 745 | Seq. ID No. 746 | YES | OM | 1 |
| 349c | Seq. ID No. 747 | Seq. ID No. 748 | YES | OM | 1 |
| 350a | Seq. ID No. 749 | Seq. ID No. 750 | yes | IM | 6 |
| 350b | Seq. ID No. 751 | Seq. ID No. 752 | yes | IM | 6 |
| 352a | Seq. ID No. 755 | Seq. ID No. 756 | YES | IM | 3 |
| 352b | Seq. ID No. 757 | Seq. ID No. 758 | YES | IM | 3 |
| 352c | Seq. ID No. 759 | Seq. ID No. 760 | YES | IM | 6 |
| 354a | Seq. ID No. 761 | Seq. ID No. 762 | YES | IM | 4 |
| 354b | Seq. ID No. 763 | Seq. ID No. 764 | yes | IM | 6 |
| 354c | Seq. ID No. 765 | Seq. ID No. 766 | yes | IM | 6 |
| 356a | Seq. ID No. 769 | Seq. ID No. 770 | yes | IM | 3 |
| 358a | Seq. ID No. 777 | Seq. ID No. 778 | yes | IM | 3 |
| 358b | Seq. ID No. 779 | Seq. ID No. 780 | yes | IM | 10 |
| 358c | Seq. ID No. 781 | Seq. ID No. 782 | yes | IM | 10 |
| 372d | Seq. ID No. 807 | Seq. ID No. 808 | YES | OM | 1 |
| 374 | Seq. ID No. 809 | Seq. ID No. 810 | NO | IM | 1 |
| 382b | Seq. ID No. 819 | Seq. ID No. 820 | yes | OM | 1 |

TABLE 5: SIGNALP: SIGNAL PEPTIDE

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | SignalP | PSORT | MSD |
|---------------|-------------------|--------------------------|---------|-------|-----|
| 384a | Seq. ID No. 825 | Seq. ID No. 826 | maybe | IM | 2 |
| 403b | Seq. ID No. 863 | Seq. ID No. 864 | NO | Peri | 2 |
| 418a | Seq. ID No. 893 | Seq. ID No. 894 | NO | IM | 5 |
| 419c | Seq. ID No. 901 | Seq. ID No. 902 | NO | IM | 2 |
| 431 | Seq. ID No. 935 | Seq. ID No. 936 | yes | OM | 1 |
| 431 | Seq. ID No. 937 | Seq. ID No. 938 | yes | IM | 2 |
| 437b | Seq. ID No. 941 | Seq. ID No. 942 | maybe | Cyto | 1 |
| 437c | Seq. ID No. 943 | Seq. ID No. 944 | maybe | Cyto | 1 |
| 441b | Seq. ID No. 955 | Seq. ID No. 956 | yes | IM | 2 |
| 443b | Seq. ID No. 957 | Seq. ID No. 958 | maybe | Cyto | |
| 448 | Seq. ID No. 967 | Seq. ID No. 968 | YES | IM | 1 |
| 452b | Seq. ID No. 979 | Seq. ID No. 980 | yes | IM | 4 |
| 452c | Seq. ID No. 981 | Seq. ID No. 982 | yes | IM | 4 |
| 452d | Seq. ID No. 983 | Seq. ID No. 984 | yes | IM | 4 |
| 452e | Seq. ID No. 985 | Seq. ID No. 986 | yes | IM | 4 |
| 460b | Seq. ID No. 1001 | Seq. ID No. 1002 | maybe | Cyto | 1 |
| 460c | Seq. ID No. 1003 | Seq. ID No. 1004 | maybe | Cyto | 1 |
| 462 | Seq. ID No. 1005 | Seq. ID No. 1006 | yes | Peri | 1 |
| 463a | Seq. ID No. 1007 | Seq. ID No. 1008 | yes | Peri | 1 |
| 463b | Seq. ID No. 1009 | Seq. ID No. 1010 | yes | Peri | 1 |
| 464a | Seq. ID No. 1011 | Seq. ID No. 1012 | maybe | IM | 2 |
| 464b | Seq. ID No. 1013 | Seq. ID No. 1014 | YES | IM | 9 |
| 464c | Seq. ID No. 1015 | Seq. ID No. 1016 | yes | IM | 11 |
| 465b | Seq. ID No. 1019 | Seq. ID No. 1020 | yes | OM | 3 |
| 472a | Seq. ID No. 1029 | Seq. ID No. 1030 | yes | IM | 4 |
| 472b | Seq. ID No. 1031 | Seq. ID No. 1032 | yes | IM | 5 |
| 472c | Seq. ID No. 1033 | Seq. ID No. 1034 | maybe | IM | 7 |
| 472d | Seq. ID No. 1035 | Seq. ID No. 1036 | maybe | IM | 8 |
| 472e | Seq. ID No. 1037 | Seq. ID No. 1038 | maybe | IM | 8 |

TABLE 5: SIGNALP: SIGNAL PEPTIDE

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | SignalP | PSORT | MSD |
|---------------|-------------------|--------------------------|---------|-------|-----|
| 472f | Seq. ID No. 1039 | Seq. ID No. 1040 | YES | IM | 10 |
| 476 | Seq. ID No. 1045 | Seq. ID No. 1046 | maybe | Peri | 1 |
| 480a | Seq. ID No. 1055 | Seq. ID No. 1056 | NO | IM | 1 |
| 492 | Seq. ID No. 1075 | Seq. ID No. 1076 | YES | OM | 1 |
| 494a | Seq. ID No. 1077 | Seq. ID No. 1078 | NO | Cyto | 1 |
| 507a | Seq. ID No. 1105 | Seq. ID No. 1106 | maybe | IM | 1 |
| 507b | Seq. ID No. 1107 | Seq. ID No. 1108 | maybe | IM | 1 |
| 521b | Seq. ID No. 1131 | Seq. ID No. 1132 | maybe | Cyto | 2 |
| 524a | Seq. ID No. 1135 | Seq. ID No. 1136 | maybe | IM | 1 |
| 524b | Seq. ID No. 1137 | Seq. ID No. 1138 | yes | IM | 6 |
| 525 | Seq. ID No. 1139 | Seq. ID No. 1140 | maybe | Cyto | 1 |
| 530a | Seq. ID No. 1151 | Seq. ID No. 1152 | yes | IM | |
| 541a | Seq. ID No. 1165 | Seq. ID No. 1166 | maybe | IM | 2 |
| 541b | Seq. ID No. 1167 | Seq. ID No. 1168 | maybe | IM | 4 |
| 541c | Seq. ID No. 1169 | Seq. ID No. 1170 | yes | IM | 5 |
| 542 | Seq. ID No. 1173 | Seq. ID No. 1174 | yes | IM | 1 |
| 545a | Seq. ID No. 1183 | Seq. ID No. 1184 | yes | IM | 3 |
| 547a | Seq. ID No. 1195 | Seq. ID No. 1196 | YES | OM | 1 |
| 547b | Seq. ID No. 1197 | Seq. ID No. 1198 | YES | IM | 1 |
| 550a | Seq. ID No. 1203 | Seq. ID No. 1204 | maybe | IM | 1 |
| 556 | Seq. ID No. 1213 | Seq. ID No. 1214 | yes | IM | 2 |
| 561 | Seq. ID No. 1223 | Seq. ID No. 1224 | yes | IM | 5 |
| 564a | Seq. ID No. 1227 | Seq. ID No. 1228 | NO | IM | 4 |
| 564b | Seq. ID No. 1229 | Seq. ID No. 1230 | yes | IM | 4 |
| 570b | Seq. ID No. 1237 | Seq. ID No. 1238 | NO | IM | 5 |
| 576a | Seq. ID No. 1243 | Seq. ID No. 1244 | YES | Peri | 1 |
| 576b | Seq. ID No. 1245 | Seq. ID No. 1246 | YES | IM | 1 |
| 585b | Seq. ID No. 1259 | Seq. ID No. 1260 | yes | Cyto | 0 |
| 587a | Seq. ID No. 1265 | Seq. ID No. 1266 | maybe | IM | 4 |

TABLE 5: SIGNALP: SIGNAL PEPTIDE

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | SignalP | PSORT | MSD |
|---------------|-------------------|--------------------------|---------|-------|-----|
| 587b | Seq. ID No. 1267 | Seq. ID No. 1268 | NO | IM | 5 |
| 587c | Seq. ID No. 1269 | Seq. ID No. 1270 | YES | IM | 9 |
| 587d | Seq. ID No. 1271 | Seq. ID No. 1272 | NO | IM | 12 |
| 595a | Seq. ID No. 1283 | Seq. ID No. 1284 | yes | IM | 2 |
| 596a | Seq. ID No. 1287 | Seq. ID No. 1288 | maybe | IM | 1 |
| 596b | Seq. ID No. 1289 | Seq. ID No. 1290 | maybe | IM | 2 |
| 596c | Seq. ID No. 1291 | Seq. ID No. 1292 | maybe | IM | 2 |
| 598a | Seq. ID No. 1295 | Seq. ID No. 1296 | maybe | IM | 2 |
| 598b | Seq. ID No. 1297 | Seq. ID No. 1298 | maybe | IM | 2 |
| 600a | Seq. ID No. 1303 | Seq. ID No. 1304 | maybe | Peri | 1 |
| 600b | Seq. ID No. 1305 | Seq. ID No. 1306 | maybe | Peri | 1 |
| 609a | Seq. ID No. 1315 | Seq. ID No. 1316 | YES | IM | 2 |
| 609b | Seq. ID No. 1317 | Seq. ID No. 1318 | YES | IM | 2 |
| 610a | Seq. ID No. 1319 | Seq. ID No. 1320 | yes | IM | 1 |
| 613a | Seq. ID No. 1325 | Seq. ID No. 1326 | maybe | IM | 6 |
| 613b | Seq. ID No. 1327 | Seq. ID No. 1328 | yes | IM | 7 |
| 613c | Seq. ID No. 1329 | Seq. ID No. 1330 | NO | IM | 9 |
| 613d | Seq. ID No. 1331 | Seq. ID No. 1332 | YES | IM | 10 |
| 615b | Seq. ID No. 1337 | Seq. ID No. 1338 | maybe | IM | 2 |
| 619a | Seq. ID No. 1341 | Seq. ID No. 1342 | yes | Cyto | 1 |
| 619b | Seq. ID No. 1343 | Seq. ID No. 1344 | yes | Cyto | 1 |
| 623 | Seq. ID No. 1347 | Seq. ID No. 1348 | yes | Peri | 1 |
| 624a | Seq. ID No. 1349 | Seq. ID No. 1350 | NO | IM | 1 |
| 624b | Seq. ID No. 1351 | Seq. ID No. 1352 | maybe | IM | 1 |
| 624c | Seq. ID No. 1353 | Seq. ID No. 1354 | maybe | IM | 1 |
| 631b | Seq. ID No. 1365 | Seq. ID No. 1366 | YES | IM | 2 |
| 631c | Seq. ID No. 1367 | Seq. ID No. 1368 | YES | IM | 2 |
| 631d | Seq. ID No. 1369 | Seq. ID No. 1370 | YES | IM | 2 |
| 632b | Seq. ID No. 1371 | Seq. ID No. 1372 | maybe | IM | 1 |

TABLE 5: SIGNALP: SIGNAL PEPTIDE

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | SignalP | PSORT | MSD |
|---------------|-------------------|--------------------------|---------|-------|-----|
| 636 | Seq. ID No. 1381 | Seq. ID No. 1382 | maybe | Cyto | |
| 645 | Seq. ID No. 1401 | Seq. ID No. 1402 | yes | Peri | 1 |
| 665 | Seq. ID No. 1429 | Seq. ID No. 1430 | yes | IM | 3 |
| 674a | Seq. ID No. 1435 | Seq. ID No. 1436 | NO | IM | 1 |
| 679a | Seq. ID No. 1445 | Seq. ID No. 1446 | YES | Cyto | 1 |
| 679b | Seq. ID No. 1447 | Seq. ID No. 1448 | YES | IM | 1 |
| 700a | Seq. ID No. 1481 | Seq. ID No. 1482 | NO | IM | 2 |
| 722a | Seq. ID No. 1513 | Seq. ID No. 1514 | YES | IM | 3 |
| 722b | Seq. ID No. 1515 | Seq. ID No. 1516 | maybe | IM | 7 |
| 722c | Seq. ID No. 1517 | Seq. ID No. 1518 | YES | IM | 11 |
| 728a | Seq. ID No. 1529 | Seq. ID No. 1530 | NO | IM | 6 |
| 730a | Seq. ID No. 1533 | Seq. ID No. 1534 | NO | IM | 3 |
| 730b | Seq. ID No. 1535 | Seq. ID No. 1536 | maybe | IM | 5 |
| 738a | Seq. ID No. 1545 | Seq. ID No. 1546 | YES | IM | 2 |
| 738b | Seq. ID No. 1547 | Seq. ID No. 1548 | NO | IM | 9 |
| 739 | Seq. ID No. 1551 | Seq. ID No. 1552 | yes | IM | 2 |
| 740 | Seq. ID No. 1553 | Seq. ID No. 1554 | NO | OM | 0 |
| 743a | Seq. ID No. 1559 | Seq. ID No. 1560 | yes | IM | 2 |
| 743b | Seq. ID No. 1561 | Seq. ID No. 1562 | YES | IM | 2 |
| 744 | Seq. ID No. 1563 | Seq. ID No. 1564 | maybe | OM | 1 |
| 746b | Seq. ID No. 1571 | Seq. ID No. 1572 | YES | IM | 6 |
| 749 | Seq. ID No. 1579 | Seq. ID No. 1580 | yes | IM | 1 |
| 754a | Seq. ID No. 1583 | Seq. ID No. 1584 | NO | IM | 3 |
| 754b | Seq. ID No. 1585 | Seq. ID No. 1586 | YES | IM | 9 |
| 772a | Seq. ID No. 1621 | Seq. ID No. 1622 | yes | IM | 5 |
| 779 | Seq. ID No. 1633 | Seq. ID No. 1634 | yes | Peri | 2 |
| 782b | Seq. ID No. 1639 | Seq. ID No. 1640 | NO | IM | 5 |
| 786b | Seq. ID No. 1643 | Seq. ID No. 1644 | YES | Peri | 1 |
| 788a | Seq. ID No. 1645 | Seq. ID No. 1646 | yes | IM | 4 |

TABLE 5: SIGNALP: SIGNAL PEPTIDE

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | SignalP | PSORT | MSD |
|---------------|-------------------|--------------------------|---------|-------|-----|
| 788b | Seq. ID No. 1647 | Seq. ID No. 1648 | yes | IM | 6 |
| 789a | Seq. ID No. 1649 | Seq. ID No. 1650 | yes | IM | 4 |
| 789c | Seq. ID No. 1653 | Seq. ID No. 1654 | YES | IM | 5 |
| 794b | Seq. ID No. 1661 | Seq. ID No. 1662 | YES | OM | 0 |
| 794c | Seq. ID No. 1663 | Seq. ID No. 1664 | YES | OM | 0 |
| 794d | Seq. ID No. 1665 | Seq. ID No. 1666 | yes | OM | 0 |
| 799a | Seq. ID No. 1671 | Seq. ID No. 1672 | yes | IM | 2 |
| 799b | Seq. ID No. 1673 | Seq. ID No. 1674 | maybe | IM | 4 |
| 799d | Seq. ID No. 1677 | Seq. ID No. 1678 | yes | IM | 9 |
| 799e | Seq. ID No. 1679 | Seq. ID No. 1680 | yes | IM | 10 |
| 799f | Seq. ID No. 1681 | Seq. ID No. 1682 | yes | IM | 10 |
| 808 | Seq. ID No. 1693 | Seq. ID No. 1694 | NO | Cyto | |
| 826 | Seq. ID No. 1707 | Seq. ID No. 1708 | YES | IM | 3 |
| 829b | Seq. ID No. 1711 | Seq. ID No. 1712 | NO | Peri | |
| 837a | Seq. ID No. 1731 | Seq. ID No. 1732 | yes | IM | 2 |
| 837b | Seq. ID No. 1733 | Seq. ID No. 1734 | YES | IM | 8 |
| 843 | Seq. ID No. 1737 | Seq. ID No. 1738 | YES | IM | 1 |
| 853a | Seq. ID No. 1753 | Seq. ID No. 1754 | yes | IM | 3 |
| 853b | Seq. ID No. 1755 | Seq. ID No. 1756 | YES | IM | 5 |
| 853c | Seq. ID No. 1757 | Seq. ID No. 1758 | maybe | IM | 5 |
| 859a | Seq. ID No. 1765 | Seq. ID No. 1766 | YES | IM | 2 |
| 859b | Seq. ID No. 1767 | Seq. ID No. 1768 | YES | IM | 4 |
| 859d | Seq. ID No. 1771 | Seq. ID No. 1772 | NO | IM | 6 |
| 864b | Seq. ID No. 1781 | Seq. ID No. 1782 | maybe | Cyto | 1 |
| 868a | Seq. ID No. 1787 | Seq. ID No. 1788 | yes | IM | 3 |
| 870 | Seq. ID No. 1791 | Seq. ID No. 1792 | YES | OM | 1 |
| 873c | Seq. ID No. 1797 | Seq. ID No. 1798 | yes | OM | 1 |
| 876 | Seq. ID No. 1805 | Seq. ID No. 1806 | YES | Peri | 1 |
| 885 | Seq. ID No. 1819 | Seq. ID No. 1820 | NO | IM | 2 |

TABLE 5: SIGNALP: SIGNAL PEPTIDE

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | SignalP | PSORT | MSD |
|---------------|-------------------|--------------------------|---------|-------|-----|
| 886 | Seq. ID No. 1821 | Seq. ID No. 1822 | yes | OM | 1 |
| 887 | Seq. ID No. 1823 | Seq. ID No. 1824 | yes | IM | 1 |
| 908a | Seq. ID No. 1839 | Seq. ID No. 1840 | yes | IM | 6 |
| 919 | Seq. ID No. 1857 | Seq. ID No. 1858 | maybe | Cyto | |
| 929a | Seq. ID No. 1869 | Seq. ID No. 1870 | maybe | Cyto | 1 |
| 931 | Seq. ID No. 1875 | Seq. ID No. 1876 | YES | IM | 2 |
| 939a | Seq. ID No. 1891 | Seq. ID No. 1892 | maybe | IM | 9 |
| 939b | Seq. ID No. 1893 | Seq. ID No. 1894 | yes | IM | 10 |
| 939c | Seq. ID No. 1895 | Seq. ID No. 1896 | NO | IM | 12 |
| 950 | Seq. ID No. 1915 | Seq. ID No. 1916 | NO | IM | 1 |
| 951a | Seq. ID No. 1917 | Seq. ID No. 1918 | yes | OM | 0 |
| 951b | Seq. ID No. 1919 | Seq. ID No. 1920 | yes | IM | 0 |
| 952b | Seq. ID No. 1923 | Seq. ID No. 1924 | maybe | IM | 4 |
| 955a | Seq. ID No. 1927 | Seq. ID No. 1928 | maybe | IM | 1 |
| 955b | Seq. ID No. 1929 | Seq. ID No. 1930 | maybe | IM | 1 |
| 977a | Seq. ID No. 1969 | Seq. ID No. 1970 | YES | OM | 1 |
| 981a | Seq. ID No. 1981 | Seq. ID No. 1982 | YES | IM | 1 |
| 987 | Seq. ID No. 1991 | Seq. ID No. 1992 | yes | IM | 5 |
| 988a | Seq. ID No. 1993 | Seq. ID No. 1994 | NO | IM | 5 |
| 993 | Seq. ID No. 2005 | Seq. ID No. 2006 | maybe | IM | 0 |
| 998a | Seq. ID No. 2013 | Seq. ID No. 2014 | yes | IM | 5 |
| 999a | Seq. ID No. 2017 | Seq. ID No. 2018 | yes | IM | 2 |
| 999b | Seq. ID No. 2019 | Seq. ID No. 2020 | yes | IM | 2 |
| 1003a | Seq. ID No. 2025 | Seq. ID No. 2026 | maybe | IM | 2 |
| 1003b | Seq. ID No. 2027 | Seq. ID No. 2028 | maybe | IM | 2 |
| 1006a | Seq. ID No. 2033 | Seq. ID No. 2034 | yes | Peri | 1 |
| 1006b | Seq. ID No. 2035 | Seq. ID No. 2036 | yes | Cyto | 1 |
| 1013a | Seq. ID No. 2041 | Seq. ID No. 2042 | maybe | IM | 5 |
| 1017a | Seq. ID No. 2049 | Seq. ID No. 2050 | yes | IM | 4 |

TABLE 5: SIGNALP: SIGNAL PEPTIDE

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | SignalP | PSORT | MSD |
|---------------|-------------------|--------------------------|---------|-------|-----|
| 1017c | Seq. ID No. 2053 | Seq. ID No. 2054 | YES | IM | 6 |
| 1017d | Seq. ID No. 2055 | Seq. ID No. 2056 | YES | IM | 6 |
| 1036a | Seq. ID No. 2087 | Seq. ID No. 2088 | YES | IM | 3 |
| 1036b | Seq. ID No. 2089 | Seq. ID No. 2090 | YES | IM | 4 |
| 1036c | Seq. ID No. 2091 | Seq. ID No. 2092 | YES | IM | 4 |
| 1044a | Seq. ID No. 2105 | Seq. ID No. 2106 | YES | IM | 2 |
| 1044b | Seq. ID No. 2107 | Seq. ID No. 2108 | maybe | IM | 3 |
| 1044c | Seq. ID No. 2109 | Seq. ID No. 2110 | maybe | IM | 3 |
| 1047a | Seq. ID No. 2113 | Seq. ID No. 2114 | yes | OM | 1 |
| 1047b | Seq. ID No. 2115 | Seq. ID No. 2116 | YES | OM | 1 |
| 1050a | Seq. ID No. 2121 | Seq. ID No. 2122 | maybe | IM | 3 |
| 1050b | Seq. ID No. 2123 | Seq. ID No. 2124 | yes | IM | 7 |
| 1050c | Seq. ID No. 2125 | Seq. ID No. 2126 | yes | IM | 7 |
| 1050d | Seq. ID No. 2127 | Seq. ID No. 2128 | yes | IM | 7 |
| 1065a | Seq. ID No. 2149 | Seq. ID No. 2150 | YES | Peri | 1 |
| 1065b | Seq. ID No. 2151 | Seq. ID No. 2152 | YES | Peri | 1 |
| 1066a | Seq. ID No. 2155 | Seq. ID No. 2156 | NO | IM | 1 |
| 1066b | Seq. ID No. 2157 | Seq. ID No. 2158 | NO | IM | 1 |
| 1067 | Seq. ID No. 2159 | Seq. ID No. 2160 | YES | OM | 1 |
| 1077a | Seq. ID No. 2171 | Seq. ID No. 2172 | yes | IM | 3 |
| 1077b | Seq. ID No. 2173 | Seq. ID No. 2174 | maybe | IM | 10 |
| 1077d | Seq. ID No. 2177 | Seq. ID No. 2178 | YES | IM | 13 |
| 1081a | Seq. ID No. 2187 | Seq. ID No. 2188 | yes | Peri | 1 |
| 1082 | Seq. ID No. 2191 | Seq. ID No. 2192 | maybe | Peri | 0 |
| 1094a | Seq. ID No. 2205 | Seq. ID No. 2206 | maybe | IM | 2 |
| 1111a | Seq. ID No. 2237 | Seq. ID No. 2238 | yes | IM | 6 |
| 1111b | Seq. ID No. 2239 | Seq. ID No. 2240 | maybe | IM | 8 |
| 1125 | Seq. ID No. 2245 | Seq. ID No. 2246 | NO | IM | 4 |
| 1126b | Seq. ID No. 2249 | Seq. ID No. 2250 | yes | IM | 4 |

TABLE 5: SIGNALP: SIGNAL PEPTIDE

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | SignalP | PSORT | MSD |
|---------------|-------------------|--------------------------|---------|-------|-----|
| 1126c | Seq. ID No. 2251 | Seq. ID No. 2252 | yes | IM | 4 |
| 1128 | Seq. ID No. 2255 | Seq. ID No. 2256 | yes | IM | 2 |
| 1132 | Seq. ID No. 2259 | Seq. ID No. 2260 | NO | Cyto | |
| 1140a | Seq. ID No. 2271 | Seq. ID No. 2272 | yes | IM | 2 |
| 1144a | Seq. ID No. 2283 | Seq. ID No. 2284 | yes | IM | 2 |
| 1146a | Seq. ID No. 2289 | Seq. ID No. 2290 | yes | IM | 3 |
| 1146b | Seq. ID No. 2291 | Seq. ID No. 2292 | NO | IM | 5 |
| 1146c | Seq. ID No. 2293 | Seq. ID No. 2294 | YES | IM | 7 |
| 1146d | Seq. ID No. 2295 | Seq. ID No. 2296 | yes | IM | 8 |
| 1152a | Seq. ID No. 2303 | Seq. ID No. 2304 | maybe | IM | 2 |
| 1152b | Seq. ID No. 2305 | Seq. ID No. 2306 | yes | IM | 5 |
| 1152c | Seq. ID No. 2307 | Seq. ID No. 2308 | yes | IM | 6 |
| 1155a | Seq. ID No. 2317 | Seq. ID No. 2318 | yes | IM | 3 |
| 1155b | Seq. ID No. 2319 | Seq. ID No. 2320 | yes | IM | 4 |
| 1155c | Seq. ID No. 2321 | Seq. ID No. 2322 | YES | IM | 5 |
| 1155d | Seq. ID No. 2323 | Seq. ID No. 2324 | yes | IM | 6 |
| 1155e | Seq. ID No. 2325 | Seq. ID No. 2326 | yes | IM | 9 |
| 1155f | Seq. ID No. 2327 | Seq. ID No. 2328 | maybe | IM | 11 |
| 1155g | Seq. ID No. 2329 | Seq. ID No. 2330 | maybe | IM | 11 |
| 1158b | Seq. ID No. 2333 | Seq. ID No. 2334 | maybe | Cyto | 1 |
| 1165 | Seq. ID No. 2343 | Seq. ID No. 2344 | yes | OM | 1 |
| 1167a | Seq. ID No. 2347 | Seq. ID No. 2348 | YES | Peri | 1 |
| 1167b | Seq. ID No. 2349 | Seq. ID No. 2350 | yes | IM | 2 |
| 1168 | Seq. ID No. 2351 | Seq. ID No. 2352 | YES | Peri | 1 |
| 1169a | Seq. ID No. 2353 | Seq. ID No. 2354 | YES | IM | 4 |
| 1169b | Seq. ID No. 2355 | Seq. ID No. 2356 | maybe | IM | 6 |
| 1169c | Seq. ID No. 2357 | Seq. ID No. 2358 | maybe | IM | 8 |
| 1172 | Seq. ID No. 2365 | Seq. ID No. 2366 | YES | IM | 1 |
| 1173 | Seq. ID No. 2367 | Seq. ID No. 2368 | maybe | IM | 2 |

TABLE 5: SIGNALP: SIGNAL PEPTIDE

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | SignalP | PSORT | MSD |
|---------------|-------------------|--------------------------|---------|-------|-----|
| 1175 | Seq. ID No. 2371 | Seq. ID No. 2372 | maybe | Cyto | 0 |
| 1178 | Seq. ID No. 2375 | Seq. ID No. 2376 | maybe | Cyto | 1 |
| 1180c | Seq. ID No. 2387 | Seq. ID No. 2388 | maybe | IM | 3 |
| 1180d | Seq. ID No. 2389 | Seq. ID No. 2390 | maybe | IM | 3 |
| 1180e | Seq. ID No. 2391 | Seq. ID No. 2392 | maybe | IM | 4 |
| 1182a | Seq. ID No. 2393 | Seq. ID No. 2394 | yes | IM | 1 |
| 1186a | Seq. ID No. 2407 | Seq. ID No. 2408 | maybe | IM | 5 |
| 1192a | Seq. ID No. 2419 | Seq. ID No. 2420 | maybe | IM | 3 |
| 1192b | Seq. ID No. 2421 | Seq. ID No. 2422 | YES | IM | 4 |
| 1196a | Seq. ID No. 2425 | Seq. ID No. 2426 | YES | Peri | 1 |
| 1196b | Seq. ID No. 2427 | Seq. ID No. 2428 | YES | Peri | 1 |
| 1197 | Seq. ID No. 2429 | Seq. ID No. 2430 | YES | IM | 2 |
| 1199a | Seq. ID No. 2433 | Seq. ID No. 2434 | maybe | IM | 3 |
| 1207 | Seq. ID No. 2449 | Seq. ID No. 2450 | YES | OM | 1 |
| 1212 | Seq. ID No. 2459 | Seq. ID No. 2460 | YES | IM | 2 |
| 1224a | Seq. ID No. 2487 | Seq. ID No. 2488 | maybe | IM | 6 |
| 1224b | Seq. ID No. 2489 | Seq. ID No. 2490 | maybe | IM | 6 |
| 1224c | Seq. ID No. 2491 | Seq. ID No. 2492 | yes | IM | 6 |
| 1225 | Seq. ID No. 2493 | Seq. ID No. 2494 | NO | Cyto | 1 |
| 1228a | Seq. ID No. 2497 | Seq. ID No. 2498 | yes | IM | 1 |
| 1228b | Seq. ID No. 2499 | Seq. ID No. 2500 | yes | IM | 2 |
| 1229b | Seq. ID No. 2501 | Seq. ID No. 2502 | NO | Cyto | 2 |
| 1229c | Seq. ID No. 2503 | Seq. ID No. 2504 | NO | Cyto | 2 |
| 1231 | Seq. ID No. 2507 | Seq. ID No. 2508 | yes | OM | 1 |
| 1234a | Seq. ID No. 2515 | Seq. ID No. 2516 | yes | IM | 4 |
| 1234b | Seq. ID No. 2517 | Seq. ID No. 2518 | yes | IM | 4 |
| 1236a | Seq. ID No. 2523 | Seq. ID No. 2524 | yes | IM | 2 |
| 1237 | Seq. ID No. 2525 | Seq. ID No. 2526 | YES | OM | 1 |
| 1239 | Seq. ID No. 2527 | Seq. ID No. 2528 | yes | OM | 1 |

TABLE 5: SIGNALP: SIGNAL PEPTIDE

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | SignalP | PSORT | MSD |
|---------------|-------------------|--------------------------|---------|-------|-----|
| 1241a | Seq. ID No. 2531 | Seq. ID No. 2532 | YES | IM | 2 |
| 1241b | Seq. ID No. 2533 | Seq. ID No. 2534 | yes | IM | 7 |
| 1241c | Seq. ID No. 2535 | Seq. ID No. 2536 | yes | IM | 7 |
| 1243 | Seq. ID No. 2537 | Seq. ID No. 2538 | maybe | IM | 4 |
| 1245a | Seq. ID No. 2541 | Seq. ID No. 2542 | yes | IM | 6 |
| 1245b | Seq. ID No. 2543 | Seq. ID No. 2544 | yes | IM | 10 |
| 1245c | Seq. ID No. 2545 | Seq. ID No. 2546 | maybe | IM | 11 |
| 1250a | Seq. ID No. 2555 | Seq. ID No. 2556 | maybe | IM | 2 |
| 1250b | Seq. ID No. 2557 | Seq. ID No. 2558 | yes | IM | 8 |
| 1251a | Seq. ID No. 2565 | Seq. ID No. 2566 | maybe | IM | 3 |
| 1253a | Seq. ID No. 2569 | Seq. ID No. 2570 | maybe | OM | 1 |
| 1253b | Seq. ID No. 2571 | Seq. ID No. 2572 | maybe | OM | 2 |
| 1258a | Seq. ID No. 2583 | Seq. ID No. 2584 | yes | IM | 5 |
| 1260 | Seq. ID No. 2591 | Seq. ID No. 2592 | maybe | Cyto | 1 |
| 1266a | Seq. ID No. 2597 | Seq. ID No. 2598 | NO | IM | 6 |
| 1266b | Seq. ID No. 2599 | Seq. ID No. 2600 | maybe | IM | 7 |
| 1267a | Seq. ID No. 2601 | Seq. ID No. 2602 | yes | IM | 2 |
| 1268b | Seq. ID No. 2607 | Seq. ID No. 2608 | YES | IM | 5 |
| 1270 | Seq. ID No. 2611 | Seq. ID No. 2612 | maybe | IM | 2 |
| 1275a | Seq. ID No. 2621 | Seq. ID No. 2622 | yes | Cyto | 1 |
| 1278a | Seq. ID No. 2627 | Seq. ID No. 2628 | NO | IM | 1 |
| 1278b | Seq. ID No. 2629 | Seq. ID No. 2630 | NO | IM | 2 |
| 1288 | Seq. ID No. 2651 | Seq. ID No. 2652 | YES | IM | 1 |
| 1308a | Seq. ID No. 2679 | Seq. ID No. 2680 | YES | IM | 3 |
| 1308b | Seq. ID No. 2681 | Seq. ID No. 2682 | yes | IM | 4 |
| 1308c | Seq. ID No. 2683 | Seq. ID No. 2684 | maybe | IM | 4 |
| 1314b | Seq. ID No. 2691 | Seq. ID No. 2692 | yes | IM | 1 |
| 1315 | Seq. ID No. 2693 | Seq. ID No. 2694 | YES | IM | 2 |
| 1316 | Seq. ID No. 2695 | Seq. ID No. 2696 | maybe | IM | |

TABLE 5: SIGNALP: SIGNAL PEPTIDE

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | SignalP | PSORT | MSD |
|---------------|-------------------|--------------------------|---------|-------|-----|
| 1317 | Seq. ID No. 2697 | Seq. ID No. 2698 | NO | Cyto | 1 |
| 1318 | Seq. ID No. 2699 | Seq. ID No. 2700 | YES | IM | 0 |
| 1319a | Seq. ID No. 2701 | Seq. ID No. 2702 | yes | IM | 4 |
| 1319b | Seq. ID No. 2703 | Seq. ID No. 2704 | YES | IM | 5 |
| 1320a | Seq. ID No. 2705 | Seq. ID No. 2706 | maybe | IM | 2 |
| 1320b | Seq. ID No. 2707 | Seq. ID No. 2708 | NO | IM | 4 |
| 1323b | Seq. ID No. 2717 | Seq. ID No. 2718 | maybe | OM | 1 |
| 1334a | Seq. ID No. 2729 | Seq. ID No. 2730 | maybe | IM | 2 |
| 1334b | Seq. ID No. 2731 | Seq. ID No. 2732 | maybe | OM | 2 |
| 1335a | Seq. ID No. 2733 | Seq. ID No. 2734 | yes | OM | 2 |
| 1365b | Seq. ID No. 2783 | Seq. ID No. 2784 | maybe | IM | 2 |
| 1366a | Seq. ID No. 2785 | Seq. ID No. 2786 | YES | Peri | 1 |
| 1375 | Seq. ID No. 2801 | Seq. ID No. 2802 | yes | Cyto | 0 |
| 1380 | Seq. ID No. 2809 | Seq. ID No. 2810 | NO | IM | 2 |
| 1381b | Seq. ID No. 2813 | Seq. ID No. 2814 | YES | IM | 2 |
| 1382 | Seq. ID No. 2815 | Seq. ID No. 2816 | yes | OM | 1 |
| 1384a | Seq. ID No. 2819 | Seq. ID No. 2820 | yes | IM | 2 |
| 1384b | Seq. ID No. 2821 | Seq. ID No. 2822 | yes | IM | 2 |
| 1384c | Seq. ID No. 2823 | Seq. ID No. 2824 | yes | IM | 2 |
| 1388b | Seq. ID No. 2831 | Seq. ID No. 2832 | maybe | Cyto | |
| 1389a | Seq. ID No. 2833 | Seq. ID No. 2834 | yes | Cyto | 0 |
| 1393a | Seq. ID No. 2835 | Seq. ID No. 2836 | YES | Peri | 1 |
| 1393b | Seq. ID No. 2837 | Seq. ID No. 2838 | yes | IM | 2 |
| 1393c | Seq. ID No. 2839 | Seq. ID No. 2840 | yes | IM | 3 |
| 1393d | Seq. ID No. 2841 | Seq. ID No. 2842 | YES | IM | 3 |
| 1395a | Seq. ID No. 2845 | Seq. ID No. 2846 | yes | Cyto | |
| 1399a | Seq. ID No. 2853 | Seq. ID No. 2854 | yes | IM | 2 |
| 1399b | Seq. ID No. 2855 | Seq. ID No. 2856 | maybe | IM | 2 |
| 1401 | Seq. ID No. 2859 | Seq. ID No. 2860 | NO | IM | 1 |

TABLE 5: SIGNALP: SIGNAL PEPTIDE

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | SignalP | PSORT | MSD |
|---------------|-------------------|--------------------------|---------|-------|-----|
| 1402c | Seq. ID No. 2861 | Seq. ID No. 2862 | yes | IM | 2 |
| 1411a | Seq. ID No. 2873 | Seq. ID No. 2874 | yes | IM | 3 |
| 1412b | Seq. ID No. 2881 | Seq. ID No. 2882 | YES | IM | 9 |
| 1418 | Seq. ID No. 2893 | Seq. ID No. 2894 | maybe | Cyto | |
| 1426a | Seq. ID No. 2905 | Seq. ID No. 2906 | yes | IM | 4 |
| 1438 | Seq. ID No. 2935 | Seq. ID No. 2936 | YES | OM | 1 |
| 1439a | Seq. ID No. 2937 | Seq. ID No. 2938 | YES | IM | 3 |
| 1439b | Seq. ID No. 2939 | Seq. ID No. 2940 | yes | IM | 5 |
| 1439c | Seq. ID No. 2941 | Seq. ID No. 2942 | yes | IM | 6 |
| 1440a | Seq. ID No. 2947 | Seq. ID No. 2948 | yes | IM | 6 |
| 1440b | Seq. ID No. 2949 | Seq. ID No. 2950 | YES | IM | 10 |
| 1440c | Seq. ID No. 2951 | Seq. ID No. 2952 | maybe | IM | 12 |
| 1447a | Seq. ID No. 2969 | Seq. ID No. 2970 | NO | IM | 10 |
| 1448 | Seq. ID No. 2973 | Seq. ID No. 2974 | YES | IM | 1 |
| 1449a | Seq. ID No. 2975 | Seq. ID No. 2976 | maybe | OM | 1 |
| 1449b | Seq. ID No. 2977 | Seq. ID No. 2978 | maybe | OM | 1 |
| 1452a | Seq. ID No. 2981 | Seq. ID No. 2982 | yes | IM | 4 |
| 1452b | Seq. ID No. 2983 | Seq. ID No. 2984 | yes | IM | 4 |
| 1454 | Seq. ID No. 2987 | Seq. ID No. 2988 | yes | Cyto | 1 |
| 1455b | Seq. ID No. 2991 | Seq. ID No. 2992 | yes | OM | 1 |
| 1457a | Seq. ID No. 2995 | Seq. ID No. 2996 | yes | IM | 3 |
| 1457b | Seq. ID No. 2997 | Seq. ID No. 2998 | maybe | IM | 4 |
| 1462b | Seq. ID No. 3005 | Seq. ID No. 3006 | yes | IM | 6 |
| 1463a | Seq. ID No. 3007 | Seq. ID No. 3008 | YES | IM | 2 |
| 1463b | Seq. ID No. 3009 | Seq. ID No. 3010 | YES | IM | 2 |
| 1463c | Seq. ID No. 3011 | Seq. ID No. 3012 | YES | IM | 2 |
| 1466a | Seq. ID No. 3013 | Seq. ID No. 3014 | maybe | IM | 1 |
| 1469a | Seq. ID No. 3023 | Seq. ID No. 3024 | NO | IM | 4 |
| 1469b | Seq. ID No. 3025 | Seq. ID No. 3026 | yes | IM | 5 |

TABLE 5: SIGNALP: SIGNAL PEPTIDE

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | SignalP | PSORT | MSD |
|---------------|-------------------|--------------------------|---------|-------|-----|
| 1469c | Seq. ID No. 3027 | Seq. ID No. 3028 | maybe | IM | 11 |
| 1470a | Seq. ID No. 3029 | Seq. ID No. 3030 | YES | IM | 5 |
| 1470b | Seq. ID No. 3031 | Seq. ID No. 3032 | YES | IM | 7 |
| 1475 | Seq. ID No. 3043 | Seq. ID No. 3044 | yes | OM | 1 |
| 1479c | Seq. ID No. 3055 | Seq. ID No. 3056 | NO | Peri | 1 |
| 1484a | Seq. ID No. 3063 | Seq. ID No. 3064 | maybe | IM | 4 |
| 1487 | Seq. ID No. 3071 | Seq. ID No. 3072 | maybe | OM | 2 |
| 1488a | Seq. ID No. 3073 | Seq. ID No. 3074 | yes | IM | 1 |
| 1488b | Seq. ID No. 3075 | Seq. ID No. 3076 | yes | IM | 2 |
| 1488c | Seq. ID No. 3077 | Seq. ID No. 3078 | maybe | IM | 3 |
| 1507a | Seq. ID No. 3119 | Seq. ID No. 3120 | NO | IM | 2 |
| 1507b | Seq. ID No. 3121 | Seq. ID No. 3122 | NO | IM | 2 |
| 1507c | Seq. ID No. 3123 | Seq. ID No. 3124 | maybe | IM | 2 |
| 1517a | Seq. ID No. 3145 | Seq. ID No. 3146 | NO | Peri | 1 |
| 1520 | Seq. ID No. 3155 | Seq. ID No. 3156 | yes | Peri | 1 |
| 1522 | Seq. ID No. 3157 | Seq. ID No. 3158 | NO | Peri | 1 |
| 1530a | Seq. ID No. 3163 | Seq. ID No. 3164 | yes | OM | 1 |
| 1530b | Seq. ID No. 3165 | Seq. ID No. 3166 | yes | IM | 1 |
| 1535a | Seq. ID No. 3173 | Seq. ID No. 3174 | maybe | Cyto | 1 |
| 1543 | Seq. ID No. 3183 | Seq. ID No. 3184 | yes | OM | 1 |
| 1552 | Seq. ID No. 3193 | Seq. ID No. 3194 | maybe | IM | 2 |
| 1554b | Seq. ID No. 3201 | Seq. ID No. 3202 | maybe | IM | 2 |
| 1557a | Seq. ID No. 3213 | Seq. ID No. 3214 | yes | IM | 4 |
| 1557b | Seq. ID No. 3215 | Seq. ID No. 3216 | yes | IM | 5 |
| 1557c | Seq. ID No. 3217 | Seq. ID No. 3218 | maybe | IM | 6 |
| 1559a | Seq. ID No. 3219 | Seq. ID No. 3220 | YES | IM | 4 |
| 1572a | Seq. ID No. 3241 | Seq. ID No. 3242 | maybe | IM | 2 |
| 1572b | Seq. ID No. 3243 | Seq. ID No. 3244 | NO | IM | 8 |
| 1572c | Seq. ID No. 3245 | Seq. ID No. 3246 | yes | IM | 10 |

TABLE 5: SIGNALP: SIGNAL PEPTIDE

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | SignalP | PSORT | MSD |
|---------------|-------------------|--------------------------|---------|-------|-----|
| 1572e | Seq. ID No. 3249 | Seq. ID No. 3250 | NO | IM | 12 |
| 1577a | Seq. ID No. 3255 | Seq. ID No. 3256 | maybe | IM | 4 |
| 1577b | Seq. ID No. 3257 | Seq. ID No. 3258 | maybe | IM | 4 |
| 1580a | Seq. ID No. 3261 | Seq. ID No. 3262 | yes | IM | 1 |
| 1580b | Seq. ID No. 3263 | Seq. ID No. 3264 | yes | IM | 1 |
| 1582b | Seq. ID No. 3269 | Seq. ID No. 3270 | yes | IM | 1 |
| 1585a | Seq. ID No. 3275 | Seq. ID No. 3276 | yes | IM | 1 |
| 1585b | Seq. ID No. 3277 | Seq. ID No. 3278 | yes | IM | 1 |
| 1594a | Seq. ID No. 3297 | Seq. ID No. 3298 | YES | IM | 1 |
| 1606a | Seq. ID No. 3317 | Seq. ID No. 3318 | yes | IM | 1 |
| 1607b | Seq. ID No. 3323 | Seq. ID No. 3324 | maybe | IM | 6 |
| 1608 | Seq. ID No. 3325 | Seq. ID No. 3326 | yes | Cyto | 1 |
| 1612 | Seq. ID No. 3331 | Seq. ID No. 3332 | YES | IM | 3 |
| 1616b | Seq. ID No. 3335 | Seq. ID No. 3336 | YES | IM | 4 |
| 1619 | Seq. ID No. 3337 | Seq. ID No. 3338 | yes | OM | 1 |
| 1621 | Seq. ID No. 3339 | Seq. ID No. 3340 | maybe | IM | 1 |
| 1624 | Seq. ID No. 3349 | Seq. ID No. 3350 | YES | Peri | 1 |
| 1625a | Seq. ID No. 3351 | Seq. ID No. 3352 | yes | IM | 4 |
| 1625b | Seq. ID No. 3353 | Seq. ID No. 3354 | YES | IM | 8 |
| 1625c | Seq. ID No. 3355 | Seq. ID No. 3356 | YES | IM | 8 |
| 1626a | Seq. ID No. 3357 | Seq. ID No. 3358 | maybe | IM | 4 |
| 1626b | Seq. ID No. 3359 | Seq. ID No. 3360 | maybe | IM | 9 |
| 1634b | Seq. ID No. 3375 | Seq. ID No. 3376 | maybe | OM | 0 |
| 1634c | Seq. ID No. 3377 | Seq. ID No. 3378 | YES | IM | 1 |
| 1646a | Seq. ID No. 3389 | Seq. ID No. 3390 | yes | IM | 2 |
| 1646b | Seq. ID No. 3391 | Seq. ID No. 3392 | YES | IM | 6 |
| 1646d | Seq. ID No. 3395 | Seq. ID No. 3396 | maybe | IM | 13 |
| 1649a | Seq. ID No. 3405 | Seq. ID No. 3406 | yes | Peri | 2 |
| 1654 | Seq. ID No. 3415 | Seq. ID No. 3416 | maybe | Peri | 0 |

TABLE 5: SIGNALP: SIGNAL PEPTIDE

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | SignalP | PSORT | MSD |
|---------------|-------------------|--------------------------|---------|-------|-----|
| 1659a | Seq. ID No. 3421 | Seq. ID No. 3422 | yes | OM | 1 |
| 1659c | Seq. ID No. 3425 | Seq. ID No. 3426 | YES | IM | 10 |
| 1660b | Seq. ID No. 3427 | Seq. ID No. 3428 | maybe | IM | 4 |
| 1663 | Seq. ID No. 3433 | Seq. ID No. 3434 | maybe | Cyto | 0 |
| 1669 | Seq. ID No. 3441 | Seq. ID No. 3442 | maybe | Cyto | 1 |
| 1673a | Seq. ID No. 3449 | Seq. ID No. 3450 | YES | IM | 2 |
| 1673b | Seq. ID No. 3451 | Seq. ID No. 3452 | yes | IM | 8 |
| 1673c | Seq. ID No. 3453 | Seq. ID No. 3454 | yes | IM | 10 |
| 1673d | Seq. ID No. 3455 | Seq. ID No. 3456 | yes | IM | 12 |
| 1673e | Seq. ID No. 3457 | Seq. ID No. 3458 | maybe | IM | 13 |
| 1675a | Seq. ID No. 3463 | Seq. ID No. 3464 | maybe | IM | 1 |
| 1683a | Seq. ID No. 3481 | Seq. ID No. 3482 | maybe | IM | 4 |
| 1688a | Seq. ID No. 3491 | Seq. ID No. 3492 | yes | IM | 3 |
| 1688b | Seq. ID No. 3493 | Seq. ID No. 3494 | YES | IM | 10 |
| 1690a | Seq. ID No. 3503 | Seq. ID No. 3504 | yes | IM | 1 |
| 1690b | Seq. ID No. 3505 | Seq. ID No. 3506 | yes | IM | 2 |
| 1694c | Seq. ID No. 3517 | Seq. ID No. 3518 | yes | IM | 1 |
| 1694d | Seq. ID No. 3519 | Seq. ID No. 3520 | yes | IM | 1 |
| 1699a | Seq. ID No. 3527 | Seq. ID No. 3528 | maybe | IM | 7 |
| 1700a | Seq. ID No. 3531 | Seq. ID No. 3532 | maybe | IM | 4 |
| 1703b | Seq. ID No. 3539 | Seq. ID No. 3540 | NO | Cyto | 0 |
| 1710b | Seq. ID No. 3561 | Seq. ID No. 3562 | NO | Cyto | |
| 1718b | Seq. ID No. 3573 | Seq. ID No. 3574 | YES | Cyto | |
| 1724 | Seq. ID No. 3581 | Seq. ID No. 3582 | maybe | IM | 2 |
| 1731 | Seq. ID No. 3587 | Seq. ID No. 3588 | NO | IM | 2 |
| 1735a | Seq. ID No. 3593 | Seq. ID No. 3594 | yes | OM | 1 |
| 1735b | Seq. ID No. 3595 | Seq. ID No. 3596 | maybe | OM | 3 |
| 1743 | Seq. ID No. 3611 | Seq. ID No. 3612 | YES | IM | 1 |
| 1745 | Seq. ID No. 3617 | Seq. ID No. 3618 | yes | Peri | 0 |

TABLE 5: SIGNALP: SIGNAL PEPTIDE

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | SignalP | PSORT | MSD |
|---------------|-------------------|--------------------------|---------|-------|-----|
| 1747 | Seq. ID No. 3619 | Seq. ID No. 3620 | YES | IM | 2 |
| 1749a | Seq. ID No. 3621 | Seq. ID No. 3622 | yes | IM | 3 |
| 1750a | Seq. ID No. 3625 | Seq. ID No. 3626 | maybe | IM | 2 |
| 1752b | Seq. ID No. 3629 | Seq. ID No. 3630 | yes | Peri | 1 |
| 1756b | Seq. ID No. 3635 | Seq. ID No. 3636 | maybe | OM | 1 |
| 1778a | Seq. ID No. 3677 | Seq. ID No. 3678 | maybe | IM | 1 |
| 1778b | Seq. ID No. 3679 | Seq. ID No. 3680 | maybe | Cyto | 1 |
| 1784b | Seq. ID No. 3689 | Seq. ID No. 3690 | YES | IM | 1 |
| 1794a | Seq. ID No. 3717 | Seq. ID No. 3718 | maybe | OM | 1 |
| 1798a | Seq. ID No. 3723 | Seq. ID No. 3724 | yes | IM | 2 |
| 1798c | Seq. ID No. 3727 | Seq. ID No. 3728 | maybe | IM | 4 |
| 1805 | Seq. ID No. 3741 | Seq. ID No. 3742 | yes | IM | 3 |
| 1806b | Seq. ID No. 3745 | Seq. ID No. 3746 | yes | IM | 5 |
| 1808a | Seq. ID No. 3753 | Seq. ID No. 3754 | YES | IM | 3 |
| 1808b | Seq. ID No. 3755 | Seq. ID No. 3756 | YES | IM | 5 |
| 1808c | Seq. ID No. 3757 | Seq. ID No. 3758 | maybe | IM | 9 |
| 1809a | Seq. ID No. 3761 | Seq. ID No. 3762 | maybe | IM | 5 |
| 1809b | Seq. ID No. 3763 | Seq. ID No. 3764 | yes | IM | 7 |
| 1809c | Seq. ID No. 3765 | Seq. ID No. 3766 | YES | IM | 8 |
| 1812a | Seq. ID No. 3781 | Seq. ID No. 3782 | YES | IM | 1 |
| 1812b | Seq. ID No. 3783 | Seq. ID No. 3784 | YES | IM | 2 |
| 1816a | Seq. ID No. 3793 | Seq. ID No. 3794 | yes | Peri | 1 |
| 1817a | Seq. ID No. 3799 | Seq. ID No. 3800 | maybe | IM | 3 |
| 1822 | Seq. ID No. 3807 | Seq. ID No. 3808 | maybe | Cyto | 1 |
| 1825 | Seq. ID No. 3813 | Seq. ID No. 3814 | yes | IM | 2 |
| 1826a | Seq. ID No. 3815 | Seq. ID No. 3816 | NO | Cyto | 0 |
| 1826b | Seq. ID No. 3817 | Seq. ID No. 3818 | NO | Cyto | 0 |
| 1838a | Seq. ID No. 3837 | Seq. ID No. 3838 | yes | IM | 3 |
| 1838b | Seq. ID No. 3839 | Seq. ID No. 3840 | yes | IM | 4 |

TABLE 5: SIGNALP: SIGNAL PEPTIDE

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | SignalP | PSORT | MSD |
|---------------|-------------------|--------------------------|---------|-------|-----|
| 1842a | Seq. ID No. 3849 | Seq. ID No. 3850 | maybe | IM | 2 |
| 1842b | Seq. ID No. 3851 | Seq. ID No. 3852 | YES | IM | 6 |
| 1842c | Seq. ID No. 3853 | Seq. ID No. 3854 | maybe | IM | 8 |
| 1845a | Seq. ID No. 3859 | Seq. ID No. 3860 | maybe | IM | 3 |
| 1845b | Seq. ID No. 3861 | Seq. ID No. 3862 | yes | IM | 8 |
| 1845c | Seq. ID No. 3863 | Seq. ID No. 3864 | maybe | IM | 10 |
| 1848a | Seq. ID No. 3865 | Seq. ID No. 3866 | yes | IM | 7 |
| 1854a | Seq. ID No. 3879 | Seq. ID No. 3880 | NO | IM | 3 |
| 1857b | Seq. ID No. 3889 | Seq. ID No. 3890 | yes | IM | 5 |
| 1857c | Seq. ID No. 3891 | Seq. ID No. 3892 | yes | IM | 6 |
| 1858 | Seq. ID No. 3895 | Seq. ID No. 3896 | yes | Cyto | 0 |
| 1862a | Seq. ID No. 3903 | Seq. ID No. 3904 | YES | IM | 1 |
| 1868 | Seq. ID No. 3915 | Seq. ID No. 3916 | yes | IM | 1 |
| 1873b | Seq. ID No. 3923 | Seq. ID No. 3924 | yes | Peri | 1 |
| 1873c | Seq. ID No. 3925 | Seq. ID No. 3926 | yes | Peri | 1 |
| 1894c | Seq. ID No. 3959 | Seq. ID No. 3960 | maybe | IM | 1 |
| 1896a | Seq. ID No. 3963 | Seq. ID No. 3964 | maybe | Peri | 1 |
| 1898a | Seq. ID No. 3973 | Seq. ID No. 3974 | maybe | IM | 2 |
| 1898b | Seq. ID No. 3975 | Seq. ID No. 3976 | yes | IM | 4 |
| 1916 | Seq. ID No. 3993 | Seq. ID No. 3994 | maybe | IM | 1 |
| 1917a | Seq. ID No. 3995 | Seq. ID No. 3996 | yes | IM | 0 |
| 1917b | Seq. ID No. 3997 | Seq. ID No. 3998 | yes | IM | 0 |
| 1919a | Seq. ID No. 4005 | Seq. ID No. 4006 | YES | Peri | 1 |
| 1919b | Seq. ID No. 4007 | Seq. ID No. 4008 | YES | IM | 1 |
| 1919c | Seq. ID No. 4009 | Seq. ID No. 4010 | yes | IM | 1 |
| 1931a | Seq. ID No. 4025 | Seq. ID No. 4026 | NO | IM | 2 |
| 1931b | Seq. ID No. 4027 | Seq. ID No. 4028 | YES | IM | 3 |
| 1936 | Seq. ID No. 4039 | Seq. ID No. 4040 | yes | IM | 6 |
| 1937a | Seq. ID No. 4041 | Seq. ID No. 4042 | yes | IM | 2 |

TABLE 5: SIGNALP: SIGNAL PEPTIDE

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | SignalP | PSORT | MSD |
|---------------|-------------------|--------------------------|---------|-------|-----|
| 1937b | Seq. ID No. 4043 | Seq. ID No. 4044 | maybe | IM | 3 |
| 1937c | Seq. ID No. 4045 | Seq. ID No. 4046 | maybe | IM | 4 |
| 1937d | Seq. ID No. 4047 | Seq. ID No. 4048 | maybe | IM | 7 |
| 1937e | Seq. ID No. 4049 | Seq. ID No. 4050 | maybe | IM | 7 |
| 1941b | Seq. ID No. 4061 | Seq. ID No. 4062 | yes | IM | 4 |
| 1946a | Seq. ID No. 4071 | Seq. ID No. 4072 | NO | IM | 4 |
| 1946b | Seq. ID No. 4073 | Seq. ID No. 4074 | YES | IM | 8 |
| 1950 | Seq. ID No. 4079 | Seq. ID No. 4080 | yes | OM | 1 |
| 1951a | Seq. ID No. 4081 | Seq. ID No. 4082 | yes | IM | 3 |
| 1951b | Seq. ID No. 4083 | Seq. ID No. 4084 | maybe | IM | 4 |
| 1958a | Seq. ID No. 4101 | Seq. ID No. 4102 | maybe | IM | 4 |
| 1958b | Seq. ID No. 4103 | Seq. ID No. 4104 | maybe | IM | 7 |
| 1960c | Seq. ID No. 4111 | Seq. ID No. 4112 | yes | IM | 1 |
| 1970b | Seq. ID No. 4133 | Seq. ID No. 4134 | maybe | OM | 1 |
| 1972 | Seq. ID No. 4135 | Seq. ID No. 4136 | yes | Cyto | 1 |
| 1973 | Seq. ID No. 4137 | Seq. ID No. 4138 | YES | OM | 1 |
| 1976 | Seq. ID No. 4139 | Seq. ID No. 4140 | yes | IM | 1 |
| 1977a | Seq. ID No. 4141 | Seq. ID No. 4142 | YES | OM | 1 |
| 1977b | Seq. ID No. 4143 | Seq. ID No. 4144 | YES | OM | 1 |
| 1977c | Seq. ID No. 4145 | Seq. ID No. 4146 | YES | OM | 1 |
| 1980a | Seq. ID No. 4151 | Seq. ID No. 4152 | NO | Cyto | 1 |
| 1980b | Seq. ID No. 4153 | Seq. ID No. 4154 | maybe | Cyto | 1 |
| 1991 | Seq. ID No. 4181 | Seq. ID No. 4182 | yes | Cyto | 1 |
| 2016a | Seq. ID No. 4221 | Seq. ID No. 4222 | yes | IM | 2 |
| 2016b | Seq. ID No. 4223 | Seq. ID No. 4224 | maybe | IM | 4 |
| 2016c | Seq. ID No. 4225 | Seq. ID No. 4226 | YES | IM | 7 |
| 2016d | Seq. ID No. 4227 | Seq. ID No. 4228 | maybe | IM | 11 |
| 2016f | Seq. ID No. 4231 | Seq. ID No. 4232 | maybe | IM | 13 |
| 2016g | Seq. ID No. 4233 | Seq. ID No. 4234 | NO | IM | 13 |

TABLE 5: SIGNALP: SIGNAL PEPTIDE

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | SignalP | PSORT | MSD |
|---------------|-------------------|--------------------------|---------|-------|-----|
| 2023a | Seq. ID No. 4241 | Seq. ID No. 4242 | maybe | IM | 4 |
| 2024b | Seq. ID No. 4247 | Seq. ID No. 4248 | yes | IM | 2 |
| 2025 | Seq. ID No. 4253 | Seq. ID No. 4254 | yes | OM | 1 |
| 2030a | Seq. ID No. 4257 | Seq. ID No. 4258 | yes | IM | 4 |
| 2030b | Seq. ID No. 4259 | Seq. ID No. 4260 | yes | IM | 5 |
| 2030c | Seq. ID No. 4261 | Seq. ID No. 4262 | yes | IM | 5 |
| 2030d | Seq. ID No. 4263 | Seq. ID No. 4264 | yes | IM | 5 |
| 2032c | Seq. ID No. 4265 | Seq. ID No. 4266 | maybe | Cyto | |
| 2035b | Seq. ID No. 4269 | Seq. ID No. 4270 | yes | Cyto | 0 |
| 2038a | Seq. ID No. 4275 | Seq. ID No. 4276 | NO | Cyto | 0 |
| 2045a | Seq. ID No. 4285 | Seq. ID No. 4286 | maybe | Cyto | 1 |
| 2045b | Seq. ID No. 4287 | Seq. ID No. 4288 | maybe | Cyto | 1 |
| 2049c | Seq. ID No. 4297 | Seq. ID No. 4298 | maybe | Cyto | |
| 2056 | Seq. ID No. 4307 | Seq. ID No. 4308 | maybe | Peri | 1 |
| 2059a | Seq. ID No. 4311 | Seq. ID No. 4312 | yes | IM | 2 |
| 2059b | Seq. ID No. 4313 | Seq. ID No. 4314 | maybe | IM | 4 |
| 2074b | Seq. ID No. 4343 | Seq. ID No. 4344 | YES | OM | 1 |
| 2092 | Seq. ID No. 4379 | Seq. ID No. 4380 | yes | IM | 2 |
| 2096a | Seq. ID No. 4385 | Seq. ID No. 4386 | YES | IM | 4 |
| 2096c | Seq. ID No. 4389 | Seq. ID No. 4390 | yes | IM | 10 |
| 2096d | Seq. ID No. 4391 | Seq. ID No. 4392 | yes | IM | 10 |
| 2101 | Seq. ID No. 4399 | Seq. ID No. 4400 | YES | Peri | 1 |
| 2105 | Seq. ID No. 4403 | Seq. ID No. 4404 | maybe | Cyto | 1 |
| 2120a | Seq. ID No. 4437 | Seq. ID No. 4438 | NO | IM | 1 |
| 2120b | Seq. ID No. 4439 | Seq. ID No. 4440 | NO | IM | 1 |
| 2122b | Seq. ID No. 4441 | Seq. ID No. 4442 | maybe | IM | 4 |
| 2140a | Seq. ID No. 4469 | Seq. ID No. 4470 | YES | IM | 4 |
| 2142a | Seq. ID No. 4473 | Seq. ID No. 4474 | yes | IM | 1 |
| 2146 | Seq. ID No. 4481 | Seq. ID No. 4482 | yes | OM | 1 |

TABLE 5: SIGNALP: SIGNAL PEPTIDE

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | SignalP | PSORT | MSD |
|---------------|-------------------|--------------------------|---------|-------|-----|
| 2147a | Seq. ID No. 4483 | Seq. ID No. 4484 | YES | IM | 2 |
| 2147b | Seq. ID No. 4485 | Seq. ID No. 4486 | maybe | IM | 5 |
| 2150a | Seq. ID No. 4493 | Seq. ID No. 4494 | YES | IM | 1 |
| 2150b | Seq. ID No. 4495 | Seq. ID No. 4496 | YES | IM | 2 |
| 2150c | Seq. ID No. 4497 | Seq. ID No. 4498 | maybe | IM | 2 |
| 2159a | Seq. ID No. 4513 | Seq. ID No. 4514 | maybe | IM | 2 |
| 2159b | Seq. ID No. 4515 | Seq. ID No. 4516 | maybe | IM | 2 |
| 2161b | Seq. ID No. 4527 | Seq. ID No. 4528 | maybe | Cyto | 1 |
| 2161c | Seq. ID No. 4529 | Seq. ID No. 4530 | maybe | Cyto | 1 |
| 2165 | Seq. ID No. 4533 | Seq. ID No. 4534 | YES | IM | 1 |
| 2190a | Seq. ID No. 4587 | Seq. ID No. 4588 | maybe | IM | 1 |
| 2190b | Seq. ID No. 4589 | Seq. ID No. 4590 | NO | Peri | 1 |
| 2219a | Seq. ID No. 4639 | Seq. ID No. 4640 | yes | IM | 1 |
| 2219b | Seq. ID No. 4641 | Seq. ID No. 4642 | maybe | IM | 4 |
| 2219c | Seq. ID No. 4643 | Seq. ID No. 4644 | maybe | IM | 4 |
| 2225 | Seq. ID No. 4659 | Seq. ID No. 4660 | yes | OM | 0 |
| 2236a | Seq. ID No. 4681 | Seq. ID No. 4682 | yes | IM | 2 |
| 2239b | Seq. ID No. 4687 | Seq. ID No. 4688 | maybe | Cyto | 0 |
| 2243a | Seq. ID No. 4695 | Seq. ID No. 4696 | maybe | IM | 2 |
| 2249 | Seq. ID No. 4705 | Seq. ID No. 4706 | yes | OM | 1 |
| 2253a | Seq. ID No. 4707 | Seq. ID No. 4708 | NO | IM | 2 |
| 2253b | Seq. ID No. 4709 | Seq. ID No. 4710 | YES | IM | 4 |
| 2253c | Seq. ID No. 4711 | Seq. ID No. 4712 | YES | IM | 5 |
| 2255a | Seq. ID No. 4715 | Seq. ID No. 4716 | NO | IM | 3 |
| 2255b | Seq. ID No. 4717 | Seq. ID No. 4718 | yes | IM | 6 |
| 2264b | Seq. ID No. 4737 | Seq. ID No. 4738 | yes | IM | 1 |
| 2276a | Seq. ID No. 4759 | Seq. ID No. 4760 | NO | IM | 1 |
| 2300 | Seq. ID No. 4813 | Seq. ID No. 4814 | yes | IM | 4 |
| 2308 | Seq. ID No. 4827 | Seq. ID No. 4828 | YES | OM | 1 |

TABLE 5: SIGNALP: SIGNAL PEPTIDE

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | SignalP | PSORT | MSD |
|---------------|-------------------|--------------------------|---------|-------|-----|
| 2320 | Seq. ID No. 4853 | Seq. ID No. 4854 | maybe | IM | 1 |
| 2324 | Seq. ID No. 4863 | Seq. ID No. 4864 | maybe | IM | 2 |
| 2329a | Seq. ID No. 4869 | Seq. ID No. 4870 | yes | IM | 1 |
| 2329b | Seq. ID No. 4871 | Seq. ID No. 4872 | YES | IM | 3 |
| 2329c | Seq. ID No. 4873 | Seq. ID No. 4874 | YES | IM | 6 |
| 2329d | Seq. ID No. 4875 | Seq. ID No. 4876 | yes | IM | 7 |
| 2357 | Seq. ID No. 4919 | Seq. ID No. 4920 | yes | IM | 2 |
| 2358 | Seq. ID No. 4921 | Seq. ID No. 4922 | YES | IM | 2 |
| 2360 | Seq. ID No. 4923 | Seq. ID No. 4924 | NO | Cyto | 1 |
| 2363a | Seq. ID No. 4929 | Seq. ID No. 4930 | yes | IM | 1 |
| 2363b | Seq. ID No. 4931 | Seq. ID No. 4932 | yes | IM | 1 |
| 2371a | Seq. ID No. 4949 | Seq. ID No. 4950 | NO | IM | 1 |
| 2372 | Seq. ID No. 4951 | Seq. ID No. 4952 | maybe | Peri | 1 |
| 2382c | Seq. ID No. 4975 | Seq. ID No. 4976 | maybe | Cyto | |
| 2390 | Seq. ID No. 4987 | Seq. ID No. 4988 | NO | Peri | 1 |
| 2397 | Seq. ID No. 4999 | Seq. ID No. 5000 | maybe | Peri | 0 |
| 2402b | Seq. ID No. 5013 | Seq. ID No. 5014 | maybe | IM | 1 |
| 2412 | Seq. ID No. 5031 | Seq. ID No. 5032 | yes | IM | 2 |
| 2423a | Seq. ID No. 5061 | Seq. ID No. 5062 | yes | IM | 5 |
| 2423b | Seq. ID No. 5063 | Seq. ID No. 5064 | yes | IM | 5 |
| 2424c | Seq. ID No. 5069 | Seq. ID No. 5070 | yes | IM | 1 |
| 2434 | Seq. ID No. 5085 | Seq. ID No. 5086 | maybe | Cyto | 1 |
| 2445 | Seq. ID No. 5103 | Seq. ID No. 5104 | yes | IM | 1 |
| 2453 | Seq. ID No. 5115 | Seq. ID No. 5116 | YES | OM | 0 |
| 2456c | Seq. ID No. 5123 | Seq. ID No. 5124 | yes | IM | 8 |
| 2456d | Seq. ID No. 5125 | Seq. ID No. 5126 | maybe | IM | 9 |
| 2458a | Seq. ID No. 5129 | Seq. ID No. 5130 | maybe | IM | 5 |
| 2458b | Seq. ID No. 5131 | Seq. ID No. 5132 | yes | IM | 6 |
| 2458c | Seq. ID No. 5133 | Seq. ID No. 5134 | yes | IM | 7 |

TABLE 5: SIGNALP: SIGNAL PEPTIDE

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | SignalP | PSORT | MSD |
|---------------|-------------------|--------------------------|---------|-------|-----|
| 2458d | Seq. ID No. 5135 | Seq. ID No. 5136 | yes | IM | 7 |
| 2458e | Seq. ID No. 5137 | Seq. ID No. 5138 | yes | IM | 8 |
| 2458f | Seq. ID No. 5139 | Seq. ID No. 5140 | yes | IM | 9 |
| 2458g | Seq. ID No. 5141 | Seq. ID No. 5142 | yes | IM | 9 |
| 2468a | Seq. ID No. 5159 | Seq. ID No. 5160 | yes | IM | 1 |
| 2469b | Seq. ID No. 5165 | Seq. ID No. 5166 | yes | IM | 2 |
| 2474b | Seq. ID No. 5175 | Seq. ID No. 5176 | yes | IM | 3 |
| 2484a | Seq. ID No. 5197 | Seq. ID No. 5198 | maybe | Peri | 1 |
| 2484b | Seq. ID No. 5199 | Seq. ID No. 5200 | maybe | Peri | 1 |
| 2490 | Seq. ID No. 5205 | Seq. ID No. 5206 | yes | IM | 1 |
| 2492a | Seq. ID No. 5207 | Seq. ID No. 5208 | yes | IM | 1 |
| 2495a | Seq. ID No. 5213 | Seq. ID No. 5214 | maybe | IM | 9 |
| 2497b | Seq. ID No. 5219 | Seq. ID No. 5220 | yes | Peri | 2 |
| 2500a | Seq. ID No. 5223 | Seq. ID No. 5224 | yes | OM | 1 |
| 2518a | Seq. ID No. 5267 | Seq. ID No. 5268 | YES | Cyto | 1 |
| 2520a | Seq. ID No. 5273 | Seq. ID No. 5274 | NO | Cyto | 0 |
| 2520b | Seq. ID No. 5275 | Seq. ID No. 5276 | NO | Cyto | 0 |
| 2520c | Seq. ID No. 5277 | Seq. ID No. 5278 | NO | Cyto | 0 |
| 2520d | Seq. ID No. 5279 | Seq. ID No. 5280 | NO | Cyto | 0 |
| 2521 | Seq. ID No. 5281 | Seq. ID No. 5282 | maybe | IM | 3 |
| 2525a | Seq. ID No. 5285 | Seq. ID No. 5286 | yes | IM | 1 |
| 2546 | Seq. ID No. 5327 | Seq. ID No. 5328 | NO | Cyto | 1 |
| 2547b | Seq. ID No. 5329 | Seq. ID No. 5330 | yes | IM | 1 |
| 2547c | Seq. ID No. 5331 | Seq. ID No. 5332 | yes | IM | 1 |
| 2550c | Seq. ID No. 5341 | Seq. ID No. 5342 | YES | IM | |
| 2564b | Seq. ID No. 5377 | Seq. ID No. 5378 | yes | OM | 1 |
| 2564c | Seq. ID No. 5379 | Seq. ID No. 5380 | yes | OM | 1 |
| 2567a | Seq. ID No. 5385 | Seq. ID No. 5386 | yes | IM | 4 |
| 2567b | Seq. ID No. 5387 | Seq. ID No. 5388 | YES | IM | 5 |

TABLE 5: SIGNALP: SIGNAL PEPTIDE

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | SignalP | PSORT | MSD |
|---------------|-------------------|--------------------------|---------|-------|-----|
| 2582a | Seq. ID No. 5405 | Seq. ID No. 5406 | yes | IM | 4 |
| 2587a | Seq. ID No. 5413 | Seq. ID No. 5414 | NO | Peri | 2 |
| 2587b | Seq. ID No. 5415 | Seq. ID No. 5416 | maybe | IM | 5 |
| 2596 | Seq. ID No. 5433 | Seq. ID No. 5434 | NO | IM | 1 |
| 2610 | Seq. ID No. 5453 | Seq. ID No. 5454 | yes | IM | 1 |
| 2616a | Seq. ID No. 5459 | Seq. ID No. 5460 | yes | IM | 2 |
| 2616b | Seq. ID No. 5461 | Seq. ID No. 5462 | yes | IM | 3 |
| 2616c | Seq. ID No. 5463 | Seq. ID No. 5464 | yes | IM | 4 |
| 2616d | Seq. ID No. 5465 | Seq. ID No. 5466 | YES | IM | 5 |
| 2623b | Seq. ID No. 5491 | Seq. ID No. 5492 | maybe | OM | 1 |
| 2625a | Seq. ID No. 5497 | Seq. ID No. 5498 | YES | Peri | 1 |
| 2628 | Seq. ID No. 5509 | Seq. ID No. 5510 | yes | IM | 1 |
| 2629b | Seq. ID No. 5513 | Seq. ID No. 5514 | YES | OM | 1 |
| 2631 | Seq. ID No. 5515 | Seq. ID No. 5516 | NO | Cyto | 1 |
| 2632 | Seq. ID No. 5517 | Seq. ID No. 5518 | NO | Cyto | 1 |
| 2633d | Seq. ID No. 5525 | Seq. ID No. 5526 | maybe | OM | 1 |
| 2637a | Seq. ID No. 5529 | Seq. ID No. 5530 | yes | OM | 1 |
| 2637b | Seq. ID No. 5531 | Seq. ID No. 5532 | yes | IM | 1 |
| 2642 | Seq. ID No. 5533 | Seq. ID No. 5534 | NO | IM | 2 |
| 2648a | Seq. ID No. 5543 | Seq. ID No. 5544 | YES | IM | 0 |
| 2648b | Seq. ID No. 5545 | Seq. ID No. 5546 | YES | IM | 0 |
| 2660 | Seq. ID No. 5569 | Seq. ID No. 5570 | yes | Peri | 1 |
| 2669a | Seq. ID No. 5587 | Seq. ID No. 5588 | YES | Peri | 2 |
| 2669b | Seq. ID No. 5589 | Seq. ID No. 5590 | YES | IM | 2 |
| 2669c | Seq. ID No. 5591 | Seq. ID No. 5592 | YES | IM | 2 |
| 2672 | Seq. ID No. 5593 | Seq. ID No. 5594 | NO | IM | 3 |
| 2673 | Seq. ID No. 5595 | Seq. ID No. 5596 | maybe | IM | 2 |
| 2674a | Seq. ID No. 5597 | Seq. ID No. 5598 | maybe | IM | 4 |
| 2679a | Seq. ID No. 5609 | Seq. ID No. 5610 | NO | IM | 4 |

TABLE 5: SIGNALP: SIGNAL PEPTIDE

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | SignalP | PSORT | MSD |
|-----------------------|--------------------------|----------------------------------|----------------|--------------|------------|
| 2679b | Seq. ID No. 5611 | Seq. ID No. 5612 | YES | IM | 5 |
| 2680c | Seq. ID No. 5621 | Seq. ID No. 5622 | YES | IM | 1 |
| 2683a | Seq. ID No. 5623 | Seq. ID No. 5624 | yes | IM | 1 |
| 2683b | Seq. ID No. 5625 | Seq. ID No. 5626 | yes | IM | 1 |
| 2688a | Seq. ID No. 5633 | Seq. ID No. 5634 | maybe | IM | 2 |
| 2688c | Seq. ID No. 5637 | Seq. ID No. 5638 | maybe | IM | 4 |
| 2689a | Seq. ID No. 5639 | Seq. ID No. 5640 | maybe | Peri | 0 |
| 2689b | Seq. ID No. 5641 | Seq. ID No. 5642 | YES | Peri | 0 |
| 2690a | Seq. ID No. 5643 | Seq. ID No. 5644 | yes | Peri | 1 |
| 2692b | Seq. ID No. 5649 | Seq. ID No. 5650 | maybe | IM | 1 |
| 2696a | Seq. ID No. 5659 | Seq. ID No. 5660 | yes | IM | 8 |
| 2710c | Seq. ID No. 5667 | Seq. ID No. 5668 | maybe | Cyto | |
| 2718a | Seq. ID No. 5681 | Seq. ID No. 5682 | YES | IM | 3 |
| 2718b | Seq. ID No. 5683 | Seq. ID No. 5684 | yes | IM | 3 |
| 2718c | Seq. ID No. 5685 | Seq. ID No. 5686 | yes | IM | 4 |
| 2719a | Seq. ID No. 5687 | Seq. ID No. 5688 | maybe | Cyto | 0 |
| 2719b | Seq. ID No. 5689 | Seq. ID No. 5690 | maybe | Cyto | 0 |
| 2723 | Seq. ID No. 5699 | Seq. ID No. 5700 | maybe | IM | 4 |
| 2725a | Seq. ID No. 5703 | Seq. ID No. 5704 | maybe | Peri | 2 |
| 2725b | Seq. ID No. 5705 | Seq. ID No. 5706 | maybe | Cyto | 2 |
| 2728a | Seq. ID No. 5709 | Seq. ID No. 5710 | yes | IM | 1 |
| 2728b | Seq. ID No. 5711 | Seq. ID No. 5712 | yes | IM | 1 |
| 2734a | Seq. ID No. 5719 | Seq. ID No. 5720 | YES | IM | 3 |
| 2738a | Seq. ID No. 5729 | Seq. ID No. 5730 | maybe | IM | 10 |
| 2738c | Seq. ID No. 5733 | Seq. ID No. 5734 | yes | IM | 12 |
| 2738d | Seq. ID No. 5735 | Seq. ID No. 5736 | maybe | IM | 12 |
| 2742b | Seq. ID No. 5739 | Seq. ID No. 5740 | yes | Peri | |
| 2749a | Seq. ID No. 5763 | Seq. ID No. 5764 | NO | IM | 3 |
| 2749b | Seq. ID No. 5765 | Seq. ID No. 5766 | yes | IM | 4 |

TABLE 5: SIGNALP: SIGNAL PEPTIDE

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | SignalP | PSORT | MSD |
|---------------|-------------------|--------------------------|---------|-------|-----|
| 2749c | Seq. ID No. 5767 | Seq. ID No. 5768 | NO | IM | 8 |
| 2749e | Seq. ID No. 5771 | Seq. ID No. 5772 | YES | IM | 10 |
| 2757b | Seq. ID No. 5783 | Seq. ID No. 5784 | YES | IM | 5 |
| 2758a | Seq. ID No. 5785 | Seq. ID No. 5786 | NO | Cyto | 0 |
| 2758d | Seq. ID No. 5791 | Seq. ID No. 5792 | maybe | Cyto | 1 |
| 2760a | Seq. ID No. 5797 | Seq. ID No. 5798 | yes | Peri | 1 |
| 2770 | Seq. ID No. 5829 | Seq. ID No. 5830 | maybe | IM | 1 |
| 2791 | Seq. ID No. 5879 | Seq. ID No. 5880 | maybe | IM | 1 |
| 2794 | Seq. ID No. 5883 | Seq. ID No. 5884 | NO | IM | 2 |
| 2796a | Seq. ID No. 5885 | Seq. ID No. 5886 | maybe | IM | 2 |
| 2799a | Seq. ID No. 5889 | Seq. ID No. 5890 | yes | OM | 1 |
| 2801a | Seq. ID No. 5893 | Seq. ID No. 5894 | yes | IM | 1 |
| 2801b | Seq. ID No. 5895 | Seq. ID No. 5896 | YES | IM | 2 |
| 2805a | Seq. ID No. 5899 | Seq. ID No. 5900 | YES | IM | 2 |
| 2805b | Seq. ID No. 5901 | Seq. ID No. 5902 | YES | IM | 4 |
| 2810a | Seq. ID No. 5905 | Seq. ID No. 5906 | yes | IM | 3 |
| 2810c | Seq. ID No. 5909 | Seq. ID No. 5910 | yes | IM | 4 |
| 2818a | Seq. ID No. 5921 | Seq. ID No. 5922 | maybe | IM | 2 |
| 2818b | Seq. ID No. 5923 | Seq. ID No. 5924 | yes | IM | 5 |
| 2818d | Seq. ID No. 5927 | Seq. ID No. 5928 | YES | IM | 6 |
| 2818e | Seq. ID No. 5929 | Seq. ID No. 5930 | YES | IM | 6 |
| 2822a | Seq. ID No. 5939 | Seq. ID No. 5940 | YES | IM | 3 |
| 2869a | Seq. ID No. 6023 | Seq. ID No. 6024 | maybe | OM | 1 |
| 2869b | Seq. ID No. 6025 | Seq. ID No. 6026 | yes | OM | 1 |
| 2869c | Seq. ID No. 6027 | Seq. ID No. 6028 | yes | IM | 1 |
| 2881 | Seq. ID No. 6043 | Seq. ID No. 6044 | yes | IM | 1 |
| 2883a | Seq. ID No. 6047 | Seq. ID No. 6048 | yes | IM | 6 |
| 2883d | Seq. ID No. 6053 | Seq. ID No. 6054 | yes | IM | 8 |
| 2887a | Seq. ID No. 6059 | Seq. ID No. 6060 | yes | Peri | 1 |

TABLE 5: SIGNALP: SIGNAL PEPTIDE

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | SignalP | PSORT | MSD |
|---------------|-------------------|--------------------------|---------|-------|-----|
| 2888 | Seq. ID No. 6063 | Seq. ID No. 6064 | maybe | Cyto | 1 |
| 2891a | Seq. ID No. 6067 | Seq. ID No. 6068 | NO | Peri | 1 |
| 2900a | Seq. ID No. 6087 | Seq. ID No. 6088 | YES | Peri | 1 |
| 2900b | Seq. ID No. 6089 | Seq. ID No. 6090 | YES | Peri | 1 |
| 2901a | Seq. ID No. 6091 | Seq. ID No. 6092 | YES | IM | 1 |
| 2902 | Seq. ID No. 6095 | Seq. ID No. 6096 | YES | IM | 0 |
| 2906 | Seq. ID No. 6103 | Seq. ID No. 6104 | YES | IM | 2 |
| 2909b | Seq. ID No. 6107 | Seq. ID No. 6108 | maybe | Cyto | 1 |
| 2909c | Seq. ID No. 6109 | Seq. ID No. 6110 | yes | IM | 4 |
| 2909d | Seq. ID No. 6111 | Seq. ID No. 6112 | yes | IM | 4 |
| 2913a | Seq. ID No. 6115 | Seq. ID No. 6116 | yes | IM | 2 |
| 2913b | Seq. ID No. 6117 | Seq. ID No. 6118 | yes | IM | 2 |
| 2922b | Seq. ID No. 6135 | Seq. ID No. 6136 | yes | Cyto | 0 |
| 2923a | Seq. ID No. 6137 | Seq. ID No. 6138 | yes | Cyto | |
| 2929b | Seq. ID No. 6159 | Seq. ID No. 6160 | maybe | Cyto | |
| 2931a | Seq. ID No. 6161 | Seq. ID No. 6162 | yes | IM | 5 |
| 2931b | Seq. ID No. 6163 | Seq. ID No. 6164 | NO | IM | 6 |
| 2931c | Seq. ID No. 6165 | Seq. ID No. 6166 | yes | IM | 13 |
| 2933b | Seq. ID No. 6169 | Seq. ID No. 6170 | YES | IM | 1 |
| 2941a | Seq. ID No. 6183 | Seq. ID No. 6184 | yes | IM | 2 |
| 2941b | Seq. ID No. 6185 | Seq. ID No. 6186 | YES | IM | 5 |
| 2941c | Seq. ID No. 6187 | Seq. ID No. 6188 | YES | IM | 5 |
| 2943a | Seq. ID No. 6189 | Seq. ID No. 6190 | yes | IM | 3 |
| 2943b | Seq. ID No. 6191 | Seq. ID No. 6192 | yes | IM | 5 |
| 2944b | Seq. ID No. 6197 | Seq. ID No. 6198 | YES | IM | 1 |
| 2948a | Seq. ID No. 6203 | Seq. ID No. 6204 | YES | IM | 1 |
| 2948b | Seq. ID No. 6205 | Seq. ID No. 6206 | YES | IM | 5 |
| 2948d | Seq. ID No. 6209 | Seq. ID No. 6210 | yes | IM | 7 |
| 2952 | Seq. ID No. 6217 | Seq. ID No. 6218 | yes | Cyto | 1 |

TABLE 5: SIGNALP: SIGNAL PEPTIDE

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | SignalP | PSORT | MSD |
|---------------|-------------------|--------------------------|---------|-------|-----|
| 2955a | Seq. ID No. 6221 | Seq. ID No. 6222 | YES | IM | 4 |
| 2955b | Seq. ID No. 6223 | Seq. ID No. 6224 | YES | IM | 4 |
| 2955c | Seq. ID No. 6225 | Seq. ID No. 6226 | yes | IM | 6 |
| 2955d | Seq. ID No. 6227 | Seq. ID No. 6228 | maybe | IM | 7 |
| 2955e | Seq. ID No. 6229 | Seq. ID No. 6230 | YES | IM | 11 |
| 2957 | Seq. ID No. 6235 | Seq. ID No. 6236 | yes | IM | 4 |
| 2958a | Seq. ID No. 6237 | Seq. ID No. 6238 | maybe | IM | 2 |
| 2958c | Seq. ID No. 6241 | Seq. ID No. 6242 | maybe | IM | 2 |
| 2959 | Seq. ID No. 6243 | Seq. ID No. 6244 | yes | IM | 2 |
| 2960a | Seq. ID No. 6245 | Seq. ID No. 6246 | maybe | IM | 2 |
| 2962b | Seq. ID No. 6249 | Seq. ID No. 6250 | yes | IM | 1 |
| 2965a | Seq. ID No. 6253 | Seq. ID No. 6254 | yes | Cyto | 1 |
| 2966 | Seq. ID No. 6259 | Seq. ID No. 6260 | yes | IM | 1 |
| 2969 | Seq. ID No. 6263 | Seq. ID No. 6264 | maybe | IM | 1 |
| 2970a | Seq. ID No. 6265 | Seq. ID No. 6266 | yes | IM | 1 |
| 2970b | Seq. ID No. 6267 | Seq. ID No. 6268 | yes | IM | 1 |
| 2974a | Seq. ID No. 6273 | Seq. ID No. 6274 | maybe | Peri | 2 |
| 2974b | Seq. ID No. 6275 | Seq. ID No. 6276 | yes | IM | 4 |
| 2978a | Seq. ID No. 6283 | Seq. ID No. 6284 | yes | Peri | 1 |
| 2978b | Seq. ID No. 6285 | Seq. ID No. 6286 | yes | Peri | 1 |
| 2980a | Seq. ID No. 6289 | Seq. ID No. 6290 | maybe | IM | 3 |
| 2986a | Seq. ID No. 6301 | Seq. ID No. 6302 | maybe | IM | 6 |
| 2986b | Seq. ID No. 6303 | Seq. ID No. 6304 | yes | IM | 7 |
| 2993a | Seq. ID No. 6325 | Seq. ID No. 6326 | yes | OM | 0 |
| 2993b | Seq. ID No. 6327 | Seq. ID No. 6328 | yes | OM | 0 |
| 3016a | Seq. ID No. 6363 | Seq. ID No. 6364 | yes | IM | 4 |
| 3016b | Seq. ID No. 6365 | Seq. ID No. 6366 | yes | IM | 7 |
| 3021 | Seq. ID No. 6377 | Seq. ID No. 6378 | NO | Peri | 1 |
| 3023 | Seq. ID No. 6381 | Seq. ID No. 6382 | maybe | IM | 1 |

TABLE 5: SIGNALP: SIGNAL PEPTIDE

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | SignalP | PSORT | MSD |
|---------------|-------------------|--------------------------|---------|-------|-----|
| 3024a | Seq. ID No. 6383 | Seq. ID No. 6384 | maybe | Peri | 1 |
| 3037a | Seq. ID No. 6415 | Seq. ID No. 6416 | YES | OM | 1 |
| 3042a | Seq. ID No. 6425 | Seq. ID No. 6426 | yes | Cyto | 1 |
| 3042b | Seq. ID No. 6427 | Seq. ID No. 6428 | yes | Cyto | 1 |
| 3043a | Seq. ID No. 6429 | Seq. ID No. 6430 | yes | IM | 2 |
| 3043b | Seq. ID No. 6431 | Seq. ID No. 6432 | yes | IM | 2 |
| 3064b | Seq. ID No. 6473 | Seq. ID No. 6474 | YES | Peri | 1 |
| 3066 | Seq. ID No. 6479 | Seq. ID No. 6480 | yes | Cyto | 0 |
| 3076 | Seq. ID No. 6497 | Seq. ID No. 6498 | maybe | IM | 3 |
| 3085 | Seq. ID No. 6517 | Seq. ID No. 6518 | maybe | Cyto | 0 |
| 3096a | Seq. ID No. 6541 | Seq. ID No. 6542 | yes | IM | 1 |
| 3096b | Seq. ID No. 6543 | Seq. ID No. 6544 | YES | IM | 1 |
| 3100a | Seq. ID No. 6555 | Seq. ID No. 6556 | maybe | Cyto | 0 |
| 3100b | Seq. ID No. 6557 | Seq. ID No. 6558 | maybe | Cyto | 0 |
| 3107a | Seq. ID No. 6571 | Seq. ID No. 6572 | yes | OM | 1 |
| 3107b | Seq. ID No. 6573 | Seq. ID No. 6574 | yes | OM | 2 |
| 3110a | Seq. ID No. 6581 | Seq. ID No. 6582 | NO | IM | 1 |
| 3119a | Seq. ID No. 6593 | Seq. ID No. 6594 | NO | IM | 3 |
| 3119b | Seq. ID No. 6595 | Seq. ID No. 6596 | YES | IM | 4 |
| 3119c | Seq. ID No. 6597 | Seq. ID No. 6598 | YES | IM | 4 |
| 3119d | Seq. ID No. 6599 | Seq. ID No. 6600 | YES | IM | 4 |
| 3119e | Seq. ID No. 6601 | Seq. ID No. 6602 | YES | IM | 4 |
| 3119f | Seq. ID No. 6603 | Seq. ID No. 6604 | YES | IM | 4 |
| 3140 | Seq. ID No. 6631 | Seq. ID No. 6632 | maybe | IM | 2 |
| 3145b | Seq. ID No. 6637 | Seq. ID No. 6638 | maybe | OM | 1 |
| 3145c | Seq. ID No. 6639 | Seq. ID No. 6640 | yes | OM | 1 |
| 3147b | Seq. ID No. 6643 | Seq. ID No. 6644 | yes | IM | 0 |
| 3147c | Seq. ID No. 6645 | Seq. ID No. 6646 | yes | OM | 0 |
| 3150a | Seq. ID No. 6649 | Seq. ID No. 6650 | NO | Cyto | 0 |

Listed in Table 6 are 2388 ORFs that meet the criteria of being a non-secretory protein, based on the HMM SignalP program. Of these ORFs, the PSORT program predicted 756 ORFs to be localized to the cytoplasmic inner membrane (IM); 35 ORFs to be localized to the periplasm (Peri); 10 ORFs to be localized to the outer membrane (OM); and 1586 ORFs localized to the cytoplasm. Shown for all ORFs is the number of transmembrane domains predicted by the TopPred2 software (listed in the MSD column).

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|-------------------|--------------------------|------------------------------|--------------|------------|
| 1 | Seq. ID No. 1 | Seq. ID No. 2 | Cyto | 2 |
| 2b | Seq. ID No. 5 | Seq. ID No. 6 | Cyto | 3 |
| 4c | Seq. ID No. 11 | Seq. ID No. 12 | IM | 12 |
| 5 | Seq. ID No. 13 | Seq. ID No. 14 | Cyto | 0 |
| 7 | Seq. ID No. 15 | Seq. ID No. 16 | Cyto | |
| 10 | Seq. ID No. 17 | Seq. ID No. 18 | Cyto | |
| 16 | Seq. ID No. 23 | Seq. ID No. 24 | IM | 0 |
| 17 | Seq. ID No. 25 | Seq. ID No. 26 | Cyto | |
| 18 | Seq. ID No. 27 | Seq. ID No. 28 | Cyto | 1 |
| 20 | Seq. ID No. 29 | Seq. ID No. 30 | IM | 1 |
| 23b | Seq. ID No. 35 | Seq. ID No. 36 | IM | 1 |
| 24 | Seq. ID No. 37 | Seq. ID No. 38 | IM | 1 |
| 32 | Seq. ID No. 39 | Seq. ID No. 40 | Cyto | |
| 36 | Seq. ID No. 41 | Seq. ID No. 42 | IM | 0 |
| 37 | Seq. ID No. 43 | Seq. ID No. 44 | Cyto | |
| 39b | Seq. ID No. 51 | Seq. ID No. 52 | IM | 5 |
| 41a | Seq. ID No. 55 | Seq. ID No. 56 | Cyto | |
| 41b | Seq. ID No. 57 | Seq. ID No. 58 | Cyto | |
| 41c | Seq. ID No. 59 | Seq. ID No. 60 | IM | 1 |
| 43b | Seq. ID No. 61 | Seq. ID No. 62 | Cyto | |
| 43c | Seq. ID No. 63 | Seq. ID No. 64 | Cyto | |
| 45 | Seq. ID No. 69 | Seq. ID No. 70 | Cyto | |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|------------|-------------------|-----------------------|-------|-----|
| 46a | Seq. ID No. 71 | Seq. ID No. 72 | Cyto | |
| 46b | Seq. ID No. 73 | Seq. ID No. 74 | Cyto | |
| 47 | Seq. ID No. 75 | Seq. ID No. 76 | Cyto | |
| 48a | Seq. ID No. 77 | Seq. ID No. 78 | IM | 0 |
| 48b | Seq. ID No. 79 | Seq. ID No. 80 | IM | 0 |
| 48c | Seq. ID No. 81 | Seq. ID No. 82 | IM | 0 |
| 50 | Seq. ID No. 83 | Seq. ID No. 84 | Cyto | 0 |
| 51c | Seq. ID No. 89 | Seq. ID No. 90 | IM | 10 |
| 55 | Seq. ID No. 91 | Seq. ID No. 92 | IM | 1 |
| 56b | Seq. ID No. 93 | Seq. ID No. 94 | Cyto | |
| 57a | Seq. ID No. 95 | Seq. ID No. 96 | IM | 0 |
| 57b | Seq. ID No. 97 | Seq. ID No. 98 | IM | 0 |
| 58 | Seq. ID No. 99 | Seq. ID No. 100 | Cyto | |
| 60a | Seq. ID No. 101 | Seq. ID No. 102 | Cyto | |
| 60b | Seq. ID No. 103 | Seq. ID No. 104 | Cyto | |
| 62a | Seq. ID No. 107 | Seq. ID No. 108 | Cyto | 0 |
| 62b | Seq. ID No. 109 | Seq. ID No. 110 | Cyto | 0 |
| 63a | Seq. ID No. 113 | Seq. ID No. 114 | OM | 0 |
| 63b | Seq. ID No. 115 | Seq. ID No. 116 | OM | 1 |
| 65a | Seq. ID No. 117 | Seq. ID No. 118 | Cyto | |
| 65b | Seq. ID No. 119 | Seq. ID No. 120 | Cyto | |
| 65c | Seq. ID No. 121 | Seq. ID No. 122 | Cyto | |
| 67 | Seq. ID No. 125 | Seq. ID No. 126 | Cyto | |
| 69 | Seq. ID No. 127 | Seq. ID No. 128 | Cyto | 0 |
| 71 | Seq. ID No. 129 | Seq. ID No. 130 | Cyto | 0 |
| 74 | Seq. ID No. 135 | Seq. ID No. 136 | Cyto | |
| 77 | Seq. ID No. 137 | Seq. ID No. 138 | Cyto | |
| 79 | Seq. ID No. 139 | Seq. ID No. 140 | IM | 2 |
| 80b | Seq. ID No. 143 | Seq. ID No. 144 | IM | 4 |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|---------------|-------------------|-----------------------|-------|-----|
| 80c | Seq. ID No. 145 | Seq. ID No. 146 | IM | 5 |
| 81a | Seq. ID No. 147 | Seq. ID No. 148 | Cyto | |
| 81b | Seq. ID No. 149 | Seq. ID No. 150 | Cyto | |
| 83 | Seq. ID No. 151 | Seq. ID No. 152 | IM | 2 |
| 85a | Seq. ID No. 153 | Seq. ID No. 154 | Cyto | |
| 85b | Seq. ID No. 155 | Seq. ID No. 156 | Cyto | |
| 85c | Seq. ID No. 157 | Seq. ID No. 158 | Cyto | |
| 87c | Seq. ID No. 165 | Seq. ID No. 166 | IM | 2 |
| 88 | Seq. ID No. 167 | Seq. ID No. 168 | IM | 5 |
| 89 | Seq. ID No. 169 | Seq. ID No. 170 | IM | 2 |
| 91b | Seq. ID No. 173 | Seq. ID No. 174 | IM | 0 |
| 91c | Seq. ID No. 175 | Seq. ID No. 176 | IM | 0 |
| 91d | Seq. ID No. 177 | Seq. ID No. 178 | IM | 0 |
| 93a | Seq. ID No. 179 | Seq. ID No. 180 | Cyto | 1 |
| 93b | Seq. ID No. 181 | Seq. ID No. 182 | Peri | 1 |
| 93c | Seq. ID No. 183 | Seq. ID No. 184 | Peri | 2 |
| 94 | Seq. ID No. 185 | Seq. ID No. 186 | IM | 2 |
| 95b | Seq. ID No. 187 | Seq. ID No. 188 | Cyto | |
| 97b | Seq. ID No. 189 | Seq. ID No. 190 | Cyto | |
| 101 | Seq. ID No. 193 | Seq. ID No. 194 | IM | 1 |
| 102 | Seq. ID No. 195 | Seq. ID No. 196 | Cyto | 0 |
| 104a | Seq. ID No. 197 | Seq. ID No. 198 | Cyto | |
| 104b | Seq. ID No. 199 | Seq. ID No. 200 | Cyto | |
| 104c | Seq. ID No. 201 | Seq. ID No. 202 | Peri | 1 |
| 105a | Seq. ID No. 203 | Seq. ID No. 204 | IM | |
| 105b | Seq. ID No. 205 | Seq. ID No. 206 | IM | |
| 106 | Seq. ID No. 207 | Seq. ID No. 208 | Cyto | 0 |
| 111b | Seq. ID No. 219 | Seq. ID No. 220 | IM | 8 |
| 112a | Seq. ID No. 221 | Seq. ID No. 222 | Cyto | 0 |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|------------|-------------------|-----------------------|-------|-----|
| 112b | Seq. ID No. 223 | Seq. ID No. 224 | Cyto | 0 |
| 115 | Seq. ID No. 227 | Seq. ID No. 228 | Cyto | |
| 119a | Seq. ID No. 229 | Seq. ID No. 230 | IM | 2 |
| 119b | Seq. ID No. 231 | Seq. ID No. 232 | IM | 3 |
| 121 | Seq. ID No. 233 | Seq. ID No. 234 | Cyto | 0 |
| 124c | Seq. ID No. 239 | Seq. ID No. 240 | IM | 5 |
| 125 | Seq. ID No. 241 | Seq. ID No. 242 | Cyto | |
| 127a | Seq. ID No. 243 | Seq. ID No. 244 | Cyto | |
| 127b | Seq. ID No. 245 | Seq. ID No. 246 | Cyto | |
| 127c | Seq. ID No. 247 | Seq. ID No. 248 | IM | |
| 129c | Seq. ID No. 253 | Seq. ID No. 254 | IM | 10 |
| 134 | Seq. ID No. 261 | Seq. ID No. 262 | Cyto | 1 |
| 135a | Seq. ID No. 263 | Seq. ID No. 264 | Cyto | |
| 135b | Seq. ID No. 265 | Seq. ID No. 266 | Cyto | |
| 137a | Seq. ID No. 267 | Seq. ID No. 268 | Cyto | |
| 137b | Seq. ID No. 269 | Seq. ID No. 270 | Cyto | |
| 142 | Seq. ID No. 275 | Seq. ID No. 276 | Cyto | |
| 144a | Seq. ID No. 279 | Seq. ID No. 280 | Peri | 0 |
| 144b | Seq. ID No. 281 | Seq. ID No. 282 | Peri | 0 |
| 144c | Seq. ID No. 283 | Seq. ID No. 284 | Cyto | 0 |
| 145d | Seq. ID No. 291 | Seq. ID No. 292 | IM | 12 |
| 147 | Seq. ID No. 293 | Seq. ID No. 294 | Cyto | |
| 151a | Seq. ID No. 295 | Seq. ID No. 296 | IM | 1 |
| 151b | Seq. ID No. 297 | Seq. ID No. 298 | IM | 1 |
| 152a | Seq. ID No. 299 | Seq. ID No. 300 | Cyto | 0 |
| 152b | Seq. ID No. 301 | Seq. ID No. 302 | Cyto | 0 |
| 153a | Seq. ID No. 303 | Seq. ID No. 304 | Cyto | |
| 153b | Seq. ID No. 305 | Seq. ID No. 306 | Cyto | |
| 153c | Seq. ID No. 307 | Seq. ID No. 308 | Cyto | |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|------------|-------------------|-----------------------|-------|-----|
| 154 | Seq. ID No. 309 | Seq. ID No. 310 | Cyto | 0 |
| 155a | Seq. ID No. 311 | Seq. ID No. 312 | Cyto | |
| 155b | Seq. ID No. 313 | Seq. ID No. 314 | Cyto | |
| 157a | Seq. ID No. 315 | Seq. ID No. 316 | Cyto | |
| 157b | Seq. ID No. 317 | Seq. ID No. 318 | Cyto | |
| 158a | Seq. ID No. 319 | Seq. ID No. 320 | Cyto | |
| 158b | Seq. ID No. 321 | Seq. ID No. 322 | Cyto | |
| 160a | Seq. ID No. 323 | Seq. ID No. 324 | Cyto | |
| 160b | Seq. ID No. 325 | Seq. ID No. 326 | Cyto | |
| 162c | Seq. ID No. 331 | Seq. ID No. 332 | IM | 5 |
| 162d | Seq. ID No. 333 | Seq. ID No. 334 | IM | 5 |
| 162e | Seq. ID No. 335 | Seq. ID No. 336 | IM | 5 |
| 163 | Seq. ID No. 337 | Seq. ID No. 338 | Cyto | 0 |
| 164 | Seq. ID No. 339 | Seq. ID No. 340 | Cyto | |
| 165a | Seq. ID No. 341 | Seq. ID No. 342 | IM | |
| 165b | Seq. ID No. 343 | Seq. ID No. 344 | IM | |
| 167 | Seq. ID No. 345 | Seq. ID No. 346 | IM | |
| 169 | Seq. ID No. 347 | Seq. ID No. 348 | IM | 2 |
| 170 | Seq. ID No. 349 | Seq. ID No. 350 | IM | 1 |
| 171a | Seq. ID No. 351 | Seq. ID No. 352 | Cyto | |
| 171b | Seq. ID No. 353 | Seq. ID No. 354 | Cyto | |
| 172 | Seq. ID No. 355 | Seq. ID No. 356 | Cyto | |
| 175 | Seq. ID No. 361 | Seq. ID No. 362 | Cyto | |
| 176 | Seq. ID No. 363 | Seq. ID No. 364 | Cyto | |
| 177a | Seq. ID No. 365 | Seq. ID No. 366 | IM | |
| 177b | Seq. ID No. 367 | Seq. ID No. 368 | IM | |
| 179a | Seq. ID No. 369 | Seq. ID No. 370 | IM | 2 |
| 179b | Seq. ID No. 371 | Seq. ID No. 372 | IM | 2 |
| 183a | Seq. ID No. 377 | Seq. ID No. 378 | IM | 1 |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|------------|-------------------|-----------------------|-------|-----|
| 184 | Seq. ID No. 379 | Seq. ID No. 380 | Cyto | |
| 185 | Seq. ID No. 381 | Seq. ID No. 382 | Cyto | |
| 186 | Seq. ID No. 383 | Seq. ID No. 384 | Cyto | |
| 187a | Seq. ID No. 385 | Seq. ID No. 386 | IM | 1 |
| 187b | Seq. ID No. 387 | Seq. ID No. 388 | IM | 1 |
| 188 | Seq. ID No. 389 | Seq. ID No. 390 | Cyto | |
| 189b | Seq. ID No. 391 | Seq. ID No. 392 | Cyto | |
| 192a | Seq. ID No. 395 | Seq. ID No. 396 | Cyto | 0 |
| 192b | Seq. ID No. 397 | Seq. ID No. 398 | Cyto | 0 |
| 193 | Seq. ID No. 399 | Seq. ID No. 400 | Cyto | |
| 195 | Seq. ID No. 405 | Seq. ID No. 406 | Cyto | |
| 196 | Seq. ID No. 407 | Seq. ID No. 408 | Cyto | 1 |
| 197a | Seq. ID No. 409 | Seq. ID No. 410 | Cyto | |
| 197b | Seq. ID No. 411 | Seq. ID No. 412 | Cyto | |
| 198a | Seq. ID No. 413 | Seq. ID No. 414 | Peri | |
| 198b | Seq. ID No. 415 | Seq. ID No. 416 | Peri | |
| 200 | Seq. ID No. 417 | Seq. ID No. 418 | Cyto | |
| 201a | Seq. ID No. 419 | Seq. ID No. 420 | IM | 2 |
| 202 | Seq. ID No. 421 | Seq. ID No. 422 | Cyto | |
| 203 | Seq. ID No. 423 | Seq. ID No. 424 | Cyto | |
| 204 | Seq. ID No. 425 | Seq. ID No. 426 | Cyto | |
| 205 | Seq. ID No. 427 | Seq. ID No. 428 | Cyto | |
| 206 | Seq. ID No. 429 | Seq. ID No. 430 | Cyto | |
| 207 | Seq. ID No. 431 | Seq. ID No. 432 | IM | 0 |
| 208a | Seq. ID No. 433 | Seq. ID No. 434 | Cyto | |
| 208b | Seq. ID No. 435 | Seq. ID No. 436 | Cyto | |
| 210 | Seq. ID No. 437 | Seq. ID No. 438 | Cyto | |
| 211 | Seq. ID No. 439 | Seq. ID No. 440 | Cyto | |
| 213 | Seq. ID No. 441 | Seq. ID No. 442 | Cyto | |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|------------|-------------------|-----------------------|-------|-----|
| 215a | Seq. ID No. 443 | Seq. ID No. 444 | Cyto | |
| 218 | Seq. ID No. 445 | Seq. ID No. 446 | Cyto | |
| 219 | Seq. ID No. 447 | Seq. ID No. 448 | Cyto | 0 |
| 220a | Seq. ID No. 449 | Seq. ID No. 450 | Cyto | 0 |
| 220b | Seq. ID No. 451 | Seq. ID No. 452 | Cyto | 0 |
| 220c | Seq. ID No. 453 | Seq. ID No. 454 | Cyto | 0 |
| 226a | Seq. ID No. 459 | Seq. ID No. 460 | Cyto | |
| 226b | Seq. ID No. 461 | Seq. ID No. 462 | Cyto | |
| 227 | Seq. ID No. 463 | Seq. ID No. 464 | Cyto | |
| 228a | Seq. ID No. 465 | Seq. ID No. 466 | Cyto | |
| 228b | Seq. ID No. 467 | Seq. ID No. 468 | Cyto | |
| 228c | Seq. ID No. 469 | Seq. ID No. 470 | Cyto | |
| 228d | Seq. ID No. 471 | Seq. ID No. 472 | Cyto | |
| 232a | Seq. ID No. 473 | Seq. ID No. 474 | IM | 0 |
| 232b | Seq. ID No. 475 | Seq. ID No. 476 | IM | 0 |
| 235b | Seq. ID No. 479 | Seq. ID No. 480 | Cyto | 1 |
| 236a | Seq. ID No. 481 | Seq. ID No. 482 | Cyto | |
| 236b | Seq. ID No. 483 | Seq. ID No. 484 | Cyto | |
| 236c | Seq. ID No. 485 | Seq. ID No. 486 | Cyto | |
| 245c | Seq. ID No. 501 | Seq. ID No. 502 | IM | 10 |
| 247 | Seq. ID No. 507 | Seq. ID No. 508 | IM | 3 |
| 251 | Seq. ID No. 517 | Seq. ID No. 518 | IM | 1 |
| 253a | Seq. ID No. 519 | Seq. ID No. 520 | IM | |
| 253b | Seq. ID No. 521 | Seq. ID No. 522 | Cyto | |
| 254 | Seq. ID No. 523 | Seq. ID No. 524 | IM | 1 |
| 255c | Seq. ID No. 529 | Seq. ID No. 530 | IM | 12 |
| 255d | Seq. ID No. 531 | Seq. ID No. 532 | IM | 12 |
| 258 | Seq. ID No. 533 | Seq. ID No. 534 | Cyto | |
| 259a | Seq. ID No. 535 | Seq. ID No. 536 | Cyto | |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|------------|-------------------|-----------------------|-------|-----|
| 259b | Seq. ID No. 537 | Seq. ID No. 538 | Cyto | |
| 259c | Seq. ID No. 539 | Seq. ID No. 540 | Cyto | |
| 260 | Seq. ID No. 541 | Seq. ID No. 542 | Cyto | |
| 262 | Seq. ID No. 543 | Seq. ID No. 544 | Cyto | |
| 265 | Seq. ID No. 551 | Seq. ID No. 552 | Cyto | |
| 267b | Seq. ID No. 553 | Seq. ID No. 554 | Cyto | 0 |
| 267c | Seq. ID No. 555 | Seq. ID No. 556 | Cyto | 0 |
| 269a | Seq. ID No. 559 | Seq. ID No. 560 | Cyto | |
| 269b | Seq. ID No. 561 | Seq. ID No. 562 | IM | 0 |
| 271a | Seq. ID No. 563 | Seq. ID No. 564 | Cyto | |
| 271b | Seq. ID No. 565 | Seq. ID No. 566 | Cyto | |
| 277a | Seq. ID No. 571 | Seq. ID No. 572 | Cyto | |
| 277b | Seq. ID No. 573 | Seq. ID No. 574 | IM | |
| 280a | Seq. ID No. 581 | Seq. ID No. 582 | Cyto | 1 |
| 280b | Seq. ID No. 583 | Seq. ID No. 584 | Cyto | 1 |
| 280c | Seq. ID No. 585 | Seq. ID No. 586 | Cyto | 1 |
| 280d | Seq. ID No. 587 | Seq. ID No. 588 | Cyto | 1 |
| 282 | Seq. ID No. 589 | Seq. ID No. 590 | Cyto | |
| 284a | Seq. ID No. 595 | Seq. ID No. 596 | IM | 5 |
| 284b | Seq. ID No. 597 | Seq. ID No. 598 | IM | 5 |
| 286a | Seq. ID No. 601 | Seq. ID No. 602 | Cyto | |
| 286b | Seq. ID No. 603 | Seq. ID No. 604 | Cyto | |
| 287 | Seq. ID No. 605 | Seq. ID No. 606 | Cyto | |
| 290a | Seq. ID No. 607 | Seq. ID No. 608 | Cyto | |
| 290b | Seq. ID No. 609 | Seq. ID No. 610 | IM | |
| 293 | Seq. ID No. 611 | Seq. ID No. 612 | Cyto | |
| 294 | Seq. ID No. 613 | Seq. ID No. 614 | Cyto | 0 |
| 296 | Seq. ID No. 615 | Seq. ID No. 616 | Cyto | 0 |
| 300b | Seq. ID No. 619 | Seq. ID No. 620 | IM | 0 |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|---------------|-------------------|-----------------------|-------|-----|
| 301a | Seq. ID No. 621 | Seq. ID No. 622 | Cyto | 1 |
| 301b | Seq. ID No. 623 | Seq. ID No. 624 | Cyto | 1 |
| 304a | Seq. ID No. 625 | Seq. ID No. 626 | Cyto | 1 |
| 304b | Seq. ID No. 627 | Seq. ID No. 628 | Cyto | 1 |
| 307 | Seq. ID No. 629 | Seq. ID No. 630 | Cyto | |
| 308 | Seq. ID No. 631 | Seq. ID No. 632 | Cyto | 0 |
| 309 | Seq. ID No. 633 | Seq. ID No. 634 | IM | 0 |
| 310 | Seq. ID No. 635 | Seq. ID No. 636 | Cyto | 0 |
| 315 | Seq. ID No. 649 | Seq. ID No. 650 | Cyto | |
| 316a | Seq. ID No. 651 | Seq. ID No. 652 | IM | 3 |
| 318d | Seq. ID No. 663 | Seq. ID No. 664 | IM | 2 |
| 318e | Seq. ID No. 665 | Seq. ID No. 666 | IM | 2 |
| 323a | Seq. ID No. 671 | Seq. ID No. 672 | Cyto | |
| 323b | Seq. ID No. 673 | Seq. ID No. 674 | Cyto | |
| 327c | Seq. ID No. 681 | Seq. ID No. 682 | IM | 5 |
| 329 | Seq. ID No. 683 | Seq. ID No. 684 | Cyto | |
| 330a | Seq. ID No. 685 | Seq. ID No. 686 | Cyto | 0 |
| 330b | Seq. ID No. 687 | Seq. ID No. 688 | Cyto | 0 |
| 330c | Seq. ID No. 689 | Seq. ID No. 690 | Cyto | 0 |
| 331 | Seq. ID No. 691 | Seq. ID No. 692 | Cyto | |
| 332 | Seq. ID No. 693 | Seq. ID No. 694 | Cyto | |
| 333 | Seq. ID No. 695 | Seq. ID No. 696 | Cyto | 1 |
| 334 | Seq. ID No. 697 | Seq. ID No. 698 | Cyto | |
| 335a | Seq. ID No. 699 | Seq. ID No. 700 | IM | 5 |
| 335b | Seq. ID No. 701 | Seq. ID No. 702 | IM | 5 |
| 337 | Seq. ID No. 703 | Seq. ID No. 704 | Cyto | |
| 338a | Seq. ID No. 705 | Seq. ID No. 706 | Cyto | |
| 338b | Seq. ID No. 707 | Seq. ID No. 708 | Cyto | |
| 338c | Seq. ID No. 709 | Seq. ID No. 710 | Cyto | |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|------------|-------------------|-----------------------|-------|-----|
| 341a | Seq. ID No. 711 | Seq. ID No. 712 | Cyto | 0 |
| 341b | Seq. ID No. 713 | Seq. ID No. 714 | Cyto | 0 |
| 342g | Seq. ID No. 727 | Seq. ID No. 728 | IM | 12 |
| 342h | Seq. ID No. 729 | Seq. ID No. 730 | IM | 12 |
| 344a | Seq. ID No. 731 | Seq. ID No. 732 | IM | 1 |
| 344b | Seq. ID No. 733 | Seq. ID No. 734 | IM | 1 |
| 345 | Seq. ID No. 735 | Seq. ID No. 736 | Cyto | |
| 346a | Seq. ID No. 737 | Seq. ID No. 738 | Cyto | |
| 346b | Seq. ID No. 739 | Seq. ID No. 740 | Cyto | 0 |
| 347 | Seq. ID No. 741 | Seq. ID No. 742 | Cyto | |
| 349a | Seq. ID No. 743 | Seq. ID No. 744 | Cyto | |
| 351 | Seq. ID No. 753 | Seq. ID No. 754 | Cyto | 1 |
| 355 | Seq. ID No. 767 | Seq. ID No. 768 | Cyto | 0 |
| 356b | Seq. ID No. 771 | Seq. ID No. 772 | IM | 4 |
| 356c | Seq. ID No. 773 | Seq. ID No. 774 | IM | 4 |
| 356d | Seq. ID No. 775 | Seq. ID No. 776 | IM | 5 |
| 362 | Seq. ID No. 783 | Seq. ID No. 784 | IM | 2 |
| 365a | Seq. ID No. 785 | Seq. ID No. 786 | Cyto | |
| 365b | Seq. ID No. 787 | Seq. ID No. 788 | Cyto | |
| 366b | Seq. ID No. 789 | Seq. ID No. 790 | Cyto | |
| 366c | Seq. ID No. 791 | Seq. ID No. 792 | Cyto | |
| 367a | Seq. ID No. 793 | Seq. ID No. 794 | Cyto | 1 |
| 367b | Seq. ID No. 795 | Seq. ID No. 796 | Cyto | 1 |
| 371a | Seq. ID No. 797 | Seq. ID No. 798 | Cyto | |
| 371b | Seq. ID No. 799 | Seq. ID No. 800 | Cyto | |
| 372a | Seq. ID No. 801 | Seq. ID No. 802 | Cyto | |
| 372b | Seq. ID No. 803 | Seq. ID No. 804 | Cyto | |
| 372c | Seq. ID No. 805 | Seq. ID No. 806 | OM | |
| 377a | Seq. ID No. 811 | Seq. ID No. 812 | Cyto | 1 |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|------------|-------------------|-----------------------|-------|-----|
| 377b | Seq. ID No. 813 | Seq. ID No. 814 | Cyto | 1 |
| 378a | Seq. ID No. 815 | Seq. ID No. 816 | IM | 1 |
| 378b | Seq. ID No. 817 | Seq. ID No. 818 | IM | 1 |
| 383a | Seq. ID No. 821 | Seq. ID No. 822 | Cyto | |
| 383b | Seq. ID No. 823 | Seq. ID No. 824 | Cyto | 1 |
| 384b | Seq. ID No. 827 | Seq. ID No. 828 | IM | 10 |
| 385a | Seq. ID No. 829 | Seq. ID No. 830 | IM | 0 |
| 385b | Seq. ID No. 831 | Seq. ID No. 832 | IM | 0 |
| 386 | Seq. ID No. 833 | Seq. ID No. 834 | Cyto | |
| 387 | Seq. ID No. 835 | Seq. ID No. 836 | Cyto | |
| 390 | Seq. ID No. 837 | Seq. ID No. 838 | IM | |
| 391 | Seq. ID No. 839 | Seq. ID No. 840 | Peri | |
| 393b | Seq. ID No. 841 | Seq. ID No. 842 | Cyto | |
| 395a | Seq. ID No. 843 | Seq. ID No. 844 | IM | 6 |
| 395b | Seq. ID No. 845 | Seq. ID No. 846 | IM | 6 |
| 395c | Seq. ID No. 847 | Seq. ID No. 848 | IM | 6 |
| 396 | Seq. ID No. 849 | Seq. ID No. 850 | Peri | 2 |
| 398 | Seq. ID No. 851 | Seq. ID No. 852 | IM | 2 |
| 400a | Seq. ID No. 853 | Seq. ID No. 854 | IM | 0 |
| 400b | Seq. ID No. 855 | Seq. ID No. 856 | IM | 0 |
| 401a | Seq. ID No. 857 | Seq. ID No. 858 | Cyto | |
| 401b | Seq. ID No. 859 | Seq. ID No. 860 | Cyto | |
| 403a | Seq. ID No. 861 | Seq. ID No. 862 | Cyto | 1 |
| 403c | Seq. ID No. 865 | Seq. ID No. 866 | Cyto | 2 |
| 403d | Seq. ID No. 867 | Seq. ID No. 868 | Cyto | 2 |
| 406a | Seq. ID No. 869 | Seq. ID No. 870 | Cyto | |
| 406b | Seq. ID No. 871 | Seq. ID No. 872 | Cyto | |
| 409a | Seq. ID No. 873 | Seq. ID No. 874 | Cyto | 0 |
| 409b | Seq. ID No. 875 | Seq. ID No. 876 | Cyto | 0 |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|---------------|-------------------|-----------------------|-------|-----|
| 410a | Seq. ID No. 877 | Seq. ID No. 878 | Cyto | 0 |
| 410b | Seq. ID No. 879 | Seq. ID No. 880 | IM | 1 |
| 410c | Seq. ID No. 881 | Seq. ID No. 882 | IM | 1 |
| 413a | Seq. ID No. 883 | Seq. ID No. 884 | Cyto | |
| 413b | Seq. ID No. 885 | Seq. ID No. 886 | Cyto | |
| 416a | Seq. ID No. 887 | Seq. ID No. 888 | Cyto | |
| 416b | Seq. ID No. 889 | Seq. ID No. 890 | Cyto | |
| 417 | Seq. ID No. 891 | Seq. ID No. 892 | Cyto | |
| 418b | Seq. ID No. 895 | Seq. ID No. 896 | IM | 7 |
| 419a | Seq. ID No. 897 | Seq. ID No. 898 | IM | 1 |
| 419b | Seq. ID No. 899 | Seq. ID No. 900 | IM | 1 |
| 420a | Seq. ID No. 903 | Seq. ID No. 904 | IM | 1 |
| 420b | Seq. ID No. 905 | Seq. ID No. 906 | IM | 1 |
| 421 | Seq. ID No. 907 | Seq. ID No. 908 | IM | 1 |
| 422 | Seq. ID No. 909 | Seq. ID No. 910 | Cyto | |
| 424a | Seq. ID No. 911 | Seq. ID No. 912 | Cyto | 0 |
| 424b | Seq. ID No. 913 | Seq. ID No. 914 | IM | 1 |
| 424c | Seq. ID No. 915 | Seq. ID No. 916 | IM | 1 |
| 426a | Seq. ID No. 917 | Seq. ID No. 918 | Cyto | |
| 426b | Seq. ID No. 919 | Seq. ID No. 920 | Cyto | |
| 427a | Seq. ID No. 921 | Seq. ID No. 922 | Cyto | |
| 427b | Seq. ID No. 923 | Seq. ID No. 924 | Cyto | |
| 427c | Seq. ID No. 925 | Seq. ID No. 926 | Cyto | |
| 429a | Seq. ID No. 927 | Seq. ID No. 928 | Cyto | |
| 429b | Seq. ID No. 929 | Seq. ID No. 930 | OM | 0 |
| 429c | Seq. ID No. 931 | Seq. ID No. 932 | Cyto | 0 |
| 429d | Seq. ID No. 933 | Seq. ID No. 934 | Cyto | 0 |
| 435 | Seq. ID No. 939 | Seq. ID No. 940 | Cyto | |
| 438a | Seq. ID No. 945 | Seq. ID No. 946 | IM | 1 |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|------------|-------------------|-----------------------|-------|-----|
| 438b | Seq. ID No. 947 | Seq. ID No. 948 | IM | 1 |
| 438c | Seq. ID No. 949 | Seq. ID No. 950 | IM | 1 |
| 440 | Seq. ID No. 951 | Seq. ID No. 952 | IM | 2 |
| 441a | Seq. ID No. 953 | Seq. ID No. 954 | IM | 1 |
| 444a | Seq. ID No. 959 | Seq. ID No. 960 | Cyto | |
| 444b | Seq. ID No. 961 | Seq. ID No. 962 | Cyto | |
| 445a | Seq. ID No. 963 | Seq. ID No. 964 | Cyto | 0 |
| 445b | Seq. ID No. 965 | Seq. ID No. 966 | Cyto | 0 |
| 450a | Seq. ID No. 969 | Seq. ID No. 970 | Cyto | 0 |
| 450b | Seq. ID No. 971 | Seq. ID No. 972 | Cyto | 0 |
| 451a | Seq. ID No. 973 | Seq. ID No. 974 | Peri | |
| 451b | Seq. ID No. 975 | Seq. ID No. 976 | Peri | |
| 452a | Seq. ID No. 977 | Seq. ID No. 978 | IM | 4 |
| 454b | Seq. ID No. 987 | Seq. ID No. 988 | Cyto | |
| 455a | Seq. ID No. 989 | Seq. ID No. 990 | IM | 0 |
| 455b | Seq. ID No. 991 | Seq. ID No. 992 | IM | 0 |
| 455c | Seq. ID No. 993 | Seq. ID No. 994 | IM | 0 |
| 458a | Seq. ID No. 995 | Seq. ID No. 996 | Cyto | |
| 458b | Seq. ID No. 997 | Seq. ID No. 998 | Cyto | |
| 460a | Seq. ID No. 999 | Seq. ID No. 1000 | Cyto | 1 |
| 464d | Seq. ID No. 1017 | Seq. ID No. 1018 | IM | 13 |
| 467a | Seq. ID No. 1021 | Seq. ID No. 1022 | Cyto | 0 |
| 467b | Seq. ID No. 1023 | Seq. ID No. 1024 | Cyto | 0 |
| 471a | Seq. ID No. 1025 | Seq. ID No. 1026 | Cyto | 1 |
| 471b | Seq. ID No. 1027 | Seq. ID No. 1028 | Cyto | 1 |
| 473 | Seq. ID No. 1041 | Seq. ID No. 1042 | IM | 2 |
| 474 | Seq. ID No. 1043 | Seq. ID No. 1044 | Cyto | 0 |
| 477b | Seq. ID No. 1047 | Seq. ID No. 1048 | Cyto | 0 |
| 478a | Seq. ID No. 1049 | Seq. ID No. 1050 | IM | 1 |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|------------|-------------------|-----------------------|-------|-----|
| 478b | Seq. ID No. 1051 | Seq. ID No. 1052 | IM | 1 |
| 479 | Seq. ID No. 1053 | Seq. ID No. 1054 | Cyto | |
| 480b | Seq. ID No. 1057 | Seq. ID No. 1058 | Cyto | 1 |
| 481a | Seq. ID No. 1059 | Seq. ID No. 1060 | Cyto | |
| 481b | Seq. ID No. 1061 | Seq. ID No. 1062 | Cyto | |
| 482a | Seq. ID No. 1063 | Seq. ID No. 1064 | Cyto | |
| 482b | Seq. ID No. 1065 | Seq. ID No. 1066 | Cyto | |
| 483 | Seq. ID No. 1067 | Seq. ID No. 1068 | Cyto | |
| 490 | Seq. ID No. 1069 | Seq. ID No. 1070 | Cyto | |
| 491a | Seq. ID No. 1071 | Seq. ID No. 1072 | Cyto | |
| 491b | Seq. ID No. 1073 | Seq. ID No. 1074 | Cyto | |
| 495a | Seq. ID No. 1079 | Seq. ID No. 1080 | Cyto | 0 |
| 495b | Seq. ID No. 1081 | Seq. ID No. 1082 | Cyto | 0 |
| 495c | Seq. ID No. 1083 | Seq. ID No. 1084 | IM | 0 |
| 498a | Seq. ID No. 1085 | Seq. ID No. 1086 | Cyto | |
| 498b | Seq. ID No. 1087 | Seq. ID No. 1088 | Cyto | |
| 499a | Seq. ID No. 1089 | Seq. ID No. 1090 | IM | 2 |
| 499b | Seq. ID No. 1091 | Seq. ID No. 1092 | IM | 2 |
| 500 | Seq. ID No. 1093 | Seq. ID No. 1094 | Cyto | |
| 502b | Seq. ID No. 1095 | Seq. ID No. 1096 | Cyto | |
| 502c | Seq. ID No. 1097 | Seq. ID No. 1098 | Cyto | |
| 504 | Seq. ID No. 1099 | Seq. ID No. 1100 | Cyto | |
| 505a | Seq. ID No. 1101 | Seq. ID No. 1102 | Cyto | 1 |
| 505b | Seq. ID No. 1103 | Seq. ID No. 1104 | Cyto | 1 |
| 509 | Seq. ID No. 1109 | Seq. ID No. 1110 | Cyto | |
| 510 | Seq. ID No. 1111 | Seq. ID No. 1112 | Cyto | |
| 512a | Seq. ID No. 1113 | Seq. ID No. 1114 | Cyto | |
| 512b | Seq. ID No. 1115 | Seq. ID No. 1116 | Cyto | |
| 514 | Seq. ID No. 1117 | Seq. ID No. 1118 | Cyto | |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|---------------|-------------------|-----------------------|-------|-----|
| 515a | Seq. ID No. 1119 | Seq. ID No. 1120 | Cyto | |
| 515b | Seq. ID No. 1121 | Seq. ID No. 1122 | IM | |
| 515c | Seq. ID No. 1123 | Seq. ID No. 1124 | Cyto | |
| 518a | Seq. ID No. 1125 | Seq. ID No. 1126 | Cyto | 0 |
| 518b | Seq. ID No. 1127 | Seq. ID No. 1128 | Cyto | 0 |
| 518c | Seq. ID No. 1129 | Seq. ID No. 1130 | Cyto | 0 |
| 523 | Seq. ID No. 1133 | Seq. ID No. 1134 | Cyto | |
| 527a | Seq. ID No. 1141 | Seq. ID No. 1142 | Cyto | |
| 527b | Seq. ID No. 1143 | Seq. ID No. 1144 | Cyto | |
| 528a | Seq. ID No. 1145 | Seq. ID No. 1146 | IM | 1 |
| 528b | Seq. ID No. 1147 | Seq. ID No. 1148 | IM | 1 |
| 529 | Seq. ID No. 1149 | Seq. ID No. 1150 | Cyto | 0 |
| 530b | Seq. ID No. 1153 | Seq. ID No. 1154 | Peri | |
| 533 | Seq. ID No. 1155 | Seq. ID No. 1156 | IM | 9 |
| 535 | Seq. ID No. 1157 | Seq. ID No. 1158 | Cyto | |
| 536 | Seq. ID No. 1159 | Seq. ID No. 1160 | Cyto | 1 |
| 539b | Seq. ID No. 1161 | Seq. ID No. 1162 | Cyto | |
| 539c | Seq. ID No. 1163 | Seq. ID No. 1164 | Cyto | |
| 541d | Seq. ID No. 1171 | Seq. ID No. 1172 | IM | 5 |
| 543a | Seq. ID No. 1175 | Seq. ID No. 1176 | Cyto | |
| 543b | Seq. ID No. 1177 | Seq. ID No. 1178 | Cyto | |
| 543c | Seq. ID No. 1179 | Seq. ID No. 1180 | Cyto | |
| 544 | Seq. ID No. 1181 | Seq. ID No. 1182 | IM | 4 |
| 545b | Seq. ID No. 1185 | Seq. ID No. 1186 | IM | 3 |
| 545c | Seq. ID No. 1187 | Seq. ID No. 1188 | IM | 4 |
| 546a | Seq. ID No. 1189 | Seq. ID No. 1190 | Cyto | |
| 546b | Seq. ID No. 1191 | Seq. ID No. 1192 | IM | 1 |
| 546c | Seq. ID No. 1193 | Seq. ID No. 1194 | IM | 1 |
| 548 | Seq. ID No. 1199 | Seq. ID No. 1200 | IM | 2 |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|------------|-------------------|-----------------------|-------|-----|
| 549b | Seq. ID No. 1201 | Seq. ID No. 1202 | IM | 2 |
| 551 | Seq. ID No. 1205 | Seq. ID No. 1206 | IM | 1 |
| 553c | Seq. ID No. 1207 | Seq. ID No. 1208 | IM | 1 |
| 554a | Seq. ID No. 1209 | Seq. ID No. 1210 | Cyto | 1 |
| 554b | Seq. ID No. 1211 | Seq. ID No. 1212 | Cyto | 1 |
| 557a | Seq. ID No. 1215 | Seq. ID No. 1216 | Cyto | 0 |
| 557b | Seq. ID No. 1217 | Seq. ID No. 1218 | Cyto | 0 |
| 560a | Seq. ID No. 1219 | Seq. ID No. 1220 | IM | 0 |
| 560b | Seq. ID No. 1221 | Seq. ID No. 1222 | IM | 0 |
| 563 | Seq. ID No. 1225 | Seq. ID No. 1226 | IM | 0 |
| 564c | Seq. ID No. 1231 | Seq. ID No. 1232 | IM | 5 |
| 569 | Seq. ID No. 1233 | Seq. ID No. 1234 | Cyto | |
| 570a | Seq. ID No. 1235 | Seq. ID No. 1236 | IM | 1 |
| 571 | Seq. ID No. 1239 | Seq. ID No. 1240 | Peri | 0 |
| 573 | Seq. ID No. 1241 | Seq. ID No. 1242 | IM | 5 |
| 578a | Seq. ID No. 1247 | Seq. ID No. 1248 | Cyto | 0 |
| 578b | Seq. ID No. 1249 | Seq. ID No. 1250 | Cyto | 0 |
| 580a | Seq. ID No. 1251 | Seq. ID No. 1252 | Cyto | |
| 580b | Seq. ID No. 1253 | Seq. ID No. 1254 | Cyto | |
| 583a | Seq. ID No. 1255 | Seq. ID No. 1256 | IM | 0 |
| 583b | Seq. ID No. 1257 | Seq. ID No. 1258 | IM | 0 |
| 586a | Seq. ID No. 1261 | Seq. ID No. 1262 | IM | 2 |
| 586b | Seq. ID No. 1263 | Seq. ID No. 1264 | IM | 2 |
| 588a | Seq. ID No. 1273 | Seq. ID No. 1274 | Cyto | 1 |
| 588b | Seq. ID No. 1275 | Seq. ID No. 1276 | Cyto | 1 |
| 589a | Seq. ID No. 1277 | Seq. ID No. 1278 | Cyto | 1 |
| 589b | Seq. ID No. 1279 | Seq. ID No. 1280 | Cyto | 1 |
| 590 | Seq. ID No. 1281 | Seq. ID No. 1282 | IM | 2 |
| 595b | Seq. ID No. 1285 | Seq. ID No. 1286 | IM | 2 |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|-----------------------|--------------------------|------------------------------|--------------|------------|
| 597 | Seq. ID No. 1293 | Seq. ID No. 1294 | IM | 3 |
| 599a | Seq. ID No. 1299 | Seq. ID No. 1300 | IM | 2 |
| 599b | Seq. ID No. 1301 | Seq. ID No. 1302 | IM | 2 |
| 603a | Seq. ID No. 1307 | Seq. ID No. 1308 | Cyto | 1 |
| 606 | Seq. ID No. 1309 | Seq. ID No. 1310 | Cyto | |
| 607a | Seq. ID No. 1311 | Seq. ID No. 1312 | IM | 0 |
| 607b | Seq. ID No. 1313 | Seq. ID No. 1314 | IM | 0 |
| 610b | Seq. ID No. 1321 | Seq. ID No. 1322 | IM | 1 |
| 611 | Seq. ID No. 1323 | Seq. ID No. 1324 | Peri | 0 |
| 614a | Seq. ID No. 1333 | Seq. ID No. 1334 | Cyto | |
| 614b | Seq. ID No. 1335 | Seq. ID No. 1336 | Cyto | |
| 618 | Seq. ID No. 1339 | Seq. ID No. 1340 | IM | 4 |
| 620 | Seq. ID No. 1345 | Seq. ID No. 1346 | Cyto | |
| 625 | Seq. ID No. 1355 | Seq. ID No. 1356 | Cyto | |
| 626a | Seq. ID No. 1357 | Seq. ID No. 1358 | Cyto | 0 |
| 626b | Seq. ID No. 1359 | Seq. ID No. 1360 | Cyto | 0 |
| 626c | Seq. ID No. 1361 | Seq. ID No. 1362 | Cyto | 0 |
| 631a | Seq. ID No. 1363 | Seq. ID No. 1364 | IM | 1 |
| 633a | Seq. ID No. 1373 | Seq. ID No. 1374 | IM | 0 |
| 633b | Seq. ID No. 1375 | Seq. ID No. 1376 | IM | 0 |
| 633c | Seq. ID No. 1377 | Seq. ID No. 1378 | Cyto | 0 |
| 634b | Seq. ID No. 1379 | Seq. ID No. 1380 | Cyto | |
| 637a | Seq. ID No. 1383 | Seq. ID No. 1384 | IM | 0 |
| 637b | Seq. ID No. 1385 | Seq. ID No. 1386 | IM | 0 |
| 637c | Seq. ID No. 1387 | Seq. ID No. 1388 | IM | 0 |
| 640 | Seq. ID No. 1389 | Seq. ID No. 1390 | Cyto | 0 |
| 641a | Seq. ID No. 1391 | Seq. ID No. 1392 | IM | 1 |
| 641b | Seq. ID No. 1393 | Seq. ID No. 1394 | IM | 1 |
| 643 | Seq. ID No. 1395 | Seq. ID No. 1396 | IM | 1 |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|-----------------------|--------------------------|------------------------------|--------------|------------|
| 644a | Seq. ID No. 1397 | Seq. ID No. 1398 | Cyto | |
| 644b | Seq. ID No. 1399 | Seq. ID No. 1400 | Cyto | |
| 650 | Seq. ID No. 1403 | Seq. ID No. 1404 | Cyto | |
| 652 | Seq. ID No. 1405 | Seq. ID No. 1406 | Cyto | |
| 653a | Seq. ID No. 1407 | Seq. ID No. 1408 | Cyto | 1 |
| 653b | Seq. ID No. 1409 | Seq. ID No. 1410 | Cyto | 1 |
| 653c | Seq. ID No. 1411 | Seq. ID No. 1412 | Cyto | 1 |
| 656 | Seq. ID No. 1413 | Seq. ID No. 1414 | Cyto | 0 |
| 657c | Seq. ID No. 1415 | Seq. ID No. 1416 | Cyto | |
| 658a | Seq. ID No. 1417 | Seq. ID No. 1418 | IM | 4 |
| 658b | Seq. ID No. 1419 | Seq. ID No. 1420 | IM | 4 |
| 659a | Seq. ID No. 1421 | Seq. ID No. 1422 | Cyto | |
| 659b | Seq. ID No. 1423 | Seq. ID No. 1424 | Cyto | |
| 661 | Seq. ID No. 1425 | Seq. ID No. 1426 | Cyto | |
| 663 | Seq. ID No. 1427 | Seq. ID No. 1428 | Cyto | 0 |
| 666 | Seq. ID No. 1431 | Seq. ID No. 1432 | IM | 4 |
| 670 | Seq. ID No. 1433 | Seq. ID No. 1434 | Cyto | 1 |
| 674b | Seq. ID No. 1437 | Seq. ID No. 1438 | IM | 1 |
| 676 | Seq. ID No. 1439 | Seq. ID No. 1440 | Cyto | |
| 677a | Seq. ID No. 1441 | Seq. ID No. 1442 | Cyto | 0 |
| 677b | Seq. ID No. 1443 | Seq. ID No. 1444 | Cyto | 0 |
| 680 | Seq. ID No. 1449 | Seq. ID No. 1450 | Cyto | 0 |
| 681 | Seq. ID No. 1451 | Seq. ID No. 1452 | Cyto | 0 |
| 683a | Seq. ID No. 1453 | Seq. ID No. 1454 | Cyto | |
| 683b | Seq. ID No. 1455 | Seq. ID No. 1456 | Cyto | |
| 684 | Seq. ID No. 1457 | Seq. ID No. 1458 | Cyto | |
| 687 | Seq. ID No. 1459 | Seq. ID No. 1460 | Peri | |
| 688a | Seq. ID No. 1461 | Seq. ID No. 1462 | IM | 4 |
| 688b | Seq. ID No. 1463 | Seq. ID No. 1464 | IM | 4 |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|------------|-------------------|-----------------------|-------|-----|
| 690 | Seq. ID No. 1465 | Seq. ID No. 1466 | Cyto | |
| 691a | Seq. ID No. 1467 | Seq. ID No. 1468 | Cyto | |
| 691b | Seq. ID No. 1469 | Seq. ID No. 1470 | Cyto | |
| 692 | Seq. ID No. 1471 | Seq. ID No. 1472 | IM | 0 |
| 694 | Seq. ID No. 1473 | Seq. ID No. 1474 | Cyto | |
| 696 | Seq. ID No. 1475 | Seq. ID No. 1476 | Cyto | |
| 698 | Seq. ID No. 1477 | Seq. ID No. 1478 | IM | 4 |
| 699b | Seq. ID No. 1479 | Seq. ID No. 1480 | IM | 1 |
| 700b | Seq. ID No. 1483 | Seq. ID No. 1484 | IM | 7 |
| 700c | Seq. ID No. 1485 | Seq. ID No. 1486 | IM | 7 |
| 703 | Seq. ID No. 1487 | Seq. ID No. 1488 | IM | 0 |
| 705a | Seq. ID No. 1489 | Seq. ID No. 1490 | Cyto | 0 |
| 705b | Seq. ID No. 1491 | Seq. ID No. 1492 | Cyto | 0 |
| 707 | Seq. ID No. 1493 | Seq. ID No. 1494 | Cyto | |
| 709 | Seq. ID No. 1495 | Seq. ID No. 1496 | Cyto | |
| 710 | Seq. ID No. 1497 | Seq. ID No. 1498 | Cyto | |
| 712a | Seq. ID No. 1499 | Seq. ID No. 1500 | Cyto | |
| 712b | Seq. ID No. 1501 | Seq. ID No. 1502 | Cyto | |
| 715a | Seq. ID No. 1503 | Seq. ID No. 1504 | Cyto | 0 |
| 715b | Seq. ID No. 1505 | Seq. ID No. 1506 | Cyto | 0 |
| 717 | Seq. ID No. 1507 | Seq. ID No. 1508 | Cyto | |
| 718a | Seq. ID No. 1509 | Seq. ID No. 1510 | Cyto | |
| 721 | Seq. ID No. 1511 | Seq. ID No. 1512 | Cyto | |
| 724a | Seq. ID No. 1519 | Seq. ID No. 1520 | Cyto | 0 |
| 724b | Seq. ID No. 1521 | Seq. ID No. 1522 | Cyto | 0 |
| 724c | Seq. ID No. 1523 | Seq. ID No. 1524 | Cyto | 0 |
| 724d | Seq. ID No. 1525 | Seq. ID No. 1526 | Cyto | 0 |
| 726 | Seq. ID No. 1527 | Seq. ID No. 1528 | Cyto | |
| 728b | Seq. ID No. 1531 | Seq. ID No. 1532 | IM | 8 |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|-----------------------|--------------------------|------------------------------|--------------|------------|
| 730c | Seq. ID No. 1537 | Seq. ID No. 1538 | IM | 5 |
| 730d | Seq. ID No. 1539 | Seq. ID No. 1540 | IM | 5 |
| 731b | Seq. ID No. 1541 | Seq. ID No. 1542 | Cyto | 1 |
| 732 | Seq. ID No. 1543 | Seq. ID No. 1544 | Cyto | 2 |
| 738c | Seq. ID No. 1549 | Seq. ID No. 1550 | IM | 10 |
| 741a | Seq. ID No. 1555 | Seq. ID No. 1556 | Cyto | |
| 741b | Seq. ID No. 1557 | Seq. ID No. 1558 | Cyto | |
| 745a | Seq. ID No. 1565 | Seq. ID No. 1566 | IM | 6 |
| 745b | Seq. ID No. 1567 | Seq. ID No. 1568 | IM | 6 |
| 746a | Seq. ID No. 1569 | Seq. ID No. 1570 | IM | 6 |
| 747 | Seq. ID No. 1573 | Seq. ID No. 1574 | Cyto | |
| 748a | Seq. ID No. 1575 | Seq. ID No. 1576 | Cyto | |
| 748b | Seq. ID No. 1577 | Seq. ID No. 1578 | Cyto | |
| 751 | Seq. ID No. 1581 | Seq. ID No. 1582 | IM | 1 |
| 754c | Seq. ID No. 1587 | Seq. ID No. 1588 | IM | 9 |
| 754d | Seq. ID No. 1589 | Seq. ID No. 1590 | IM | 9 |
| 756a | Seq. ID No. 1591 | Seq. ID No. 1592 | Cyto | 1 |
| 756b | Seq. ID No. 1593 | Seq. ID No. 1594 | Cyto | 1 |
| 758 | Seq. ID No. 1595 | Seq. ID No. 1596 | Cyto | |
| 760 | Seq. ID No. 1597 | Seq. ID No. 1598 | Cyto | |
| 762b | Seq. ID No. 1601 | Seq. ID No. 1602 | Cyto | 0 |
| 762c | Seq. ID No. 1603 | Seq. ID No. 1604 | Cyto | 0 |
| 763a | Seq. ID No. 1605 | Seq. ID No. 1606 | Cyto | |
| 763b | Seq. ID No. 1607 | Seq. ID No. 1608 | Cyto | |
| 764 | Seq. ID No. 1609 | Seq. ID No. 1610 | Cyto | |
| 766 | Seq. ID No. 1611 | Seq. ID No. 1612 | Cyto | 0 |
| 767 | Seq. ID No. 1613 | Seq. ID No. 1614 | Cyto | |
| 770a | Seq. ID No. 1615 | Seq. ID No. 1616 | IM | |
| 770b | Seq. ID No. 1617 | Seq. ID No. 1618 | Cyto | |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|---------------|-------------------|-----------------------|-------|-----|
| 770c | Seq. ID No. 1619 | Seq. ID No. 1620 | Cyto | |
| 772b | Seq. ID No. 1623 | Seq. ID No. 1624 | IM | 6 |
| 774 | Seq. ID No. 1625 | Seq. ID No. 1626 | Cyto | 0 |
| 775 | Seq. ID No. 1627 | Seq. ID No. 1628 | IM | 7 |
| 777a | Seq. ID No. 1629 | Seq. ID No. 1630 | Cyto | |
| 777c | Seq. ID No. 1631 | Seq. ID No. 1632 | OM | |
| 780a | Seq. ID No. 1635 | Seq. ID No. 1636 | Cyto | |
| 780b | Seq. ID No. 1637 | Seq. ID No. 1638 | Cyto | |
| 785 | Seq. ID No. 1641 | Seq. ID No. 1642 | Cyto | 0 |
| 789b | Seq. ID No. 1651 | Seq. ID No. 1652 | IM | 4 |
| 791 | Seq. ID No. 1655 | Seq. ID No. 1656 | Cyto | |
| 792 | Seq. ID No. 1657 | Seq. ID No. 1658 | Cyto | |
| 794a | Seq. ID No. 1659 | Seq. ID No. 1660 | Peri | 0 |
| 795 | Seq. ID No. 1667 | Seq. ID No. 1668 | Cyto | |
| 797 | Seq. ID No. 1669 | Seq. ID No. 1670 | Cyto | |
| 799c | Seq. ID No. 1675 | Seq. ID No. 1676 | IM | 9 |
| 803a | Seq. ID No. 1683 | Seq. ID No. 1684 | Cyto | 3 |
| 803b | Seq. ID No. 1685 | Seq. ID No. 1686 | Cyto | 3 |
| 804a | Seq. ID No. 1687 | Seq. ID No. 1688 | Cyto | |
| 804b | Seq. ID No. 1689 | Seq. ID No. 1690 | Cyto | |
| 807 | Seq. ID No. 1691 | Seq. ID No. 1692 | Cyto | |
| 809b | Seq. ID No. 1695 | Seq. ID No. 1696 | IM | 4 |
| 812 | Seq. ID No. 1697 | Seq. ID No. 1698 | Cyto | 0 |
| 813 | Seq. ID No. 1699 | Seq. ID No. 1700 | IM | 5 |
| 816 | Seq. ID No. 1701 | Seq. ID No. 1702 | IM | 0 |
| 820a | Seq. ID No. 1703 | Seq. ID No. 1704 | IM | 0 |
| 820b | Seq. ID No. 1705 | Seq. ID No. 1706 | IM | 0 |
| 829a | Seq. ID No. 1709 | Seq. ID No. 1710 | Peri | |
| 830 | Seq. ID No. 1713 | Seq. ID No. 1714 | Cyto | |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|---------------|-------------------|-----------------------|-------|-----|
| 834a | Seq. ID No. 1715 | Seq. ID No. 1716 | Cyto | |
| 834b | Seq. ID No. 1717 | Seq. ID No. 1718 | Cyto | |
| 834c | Seq. ID No. 1719 | Seq. ID No. 1720 | Cyto | |
| 835a | Seq. ID No. 1721 | Seq. ID No. 1722 | Cyto | |
| 835b | Seq. ID No. 1723 | Seq. ID No. 1724 | Cyto | |
| 836a | Seq. ID No. 1725 | Seq. ID No. 1726 | Cyto | |
| 836b | Seq. ID No. 1727 | Seq. ID No. 1728 | Cyto | |
| 836c | Seq. ID No. 1729 | Seq. ID No. 1730 | Cyto | |
| 837c | Seq. ID No. 1735 | Seq. ID No. 1736 | IM | 8 |
| 847a | Seq. ID No. 1739 | Seq. ID No. 1740 | IM | 1 |
| 847b | Seq. ID No. 1741 | Seq. ID No. 1742 | IM | 1 |
| 848 | Seq. ID No. 1743 | Seq. ID No. 1744 | Cyto | |
| 849a | Seq. ID No. 1745 | Seq. ID No. 1746 | Cyto | |
| 849b | Seq. ID No. 1747 | Seq. ID No. 1748 | IM | 0 |
| 851a | Seq. ID No. 1749 | Seq. ID No. 1750 | Cyto | |
| 851b | Seq. ID No. 1751 | Seq. ID No. 1752 | Cyto | |
| 854 | Seq. ID No. 1759 | Seq. ID No. 1760 | IM | 2 |
| 855 | Seq. ID No. 1761 | Seq. ID No. 1762 | Cyto | |
| 857 | Seq. ID No. 1763 | Seq. ID No. 1764 | Peri | 1 |
| 859c | Seq. ID No. 1769 | Seq. ID No. 1770 | IM | 6 |
| 860 | Seq. ID No. 1773 | Seq. ID No. 1774 | Cyto | |
| 862 | Seq. ID No. 1775 | Seq. ID No. 1776 | Peri | 0 |
| 863 | Seq. ID No. 1777 | Seq. ID No. 1778 | Cyto | |
| 864a | Seq. ID No. 1779 | Seq. ID No. 1780 | Cyto | 1 |
| 866a | Seq. ID No. 1783 | Seq. ID No. 1784 | Cyto | |
| 866b | Seq. ID No. 1785 | Seq. ID No. 1786 | Cyto | 0 |
| 868b | Seq. ID No. 1789 | Seq. ID No. 1790 | IM | 6 |
| 873a | Seq. ID No. 1793 | Seq. ID No. 1794 | Cyto | |
| 873b | Seq. ID No. 1795 | Seq. ID No. 1796 | Cyto | |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|------------|-------------------|-----------------------|-------|-----|
| 874a | Seq. ID No. 1799 | Seq. ID No. 1800 | Cyto | |
| 874b | Seq. ID No. 1801 | Seq. ID No. 1802 | Cyto | |
| 875 | Seq. ID No. 1803 | Seq. ID No. 1804 | Cyto | |
| 878a | Seq. ID No. 1807 | Seq. ID No. 1808 | Cyto | |
| 878b | Seq. ID No. 1809 | Seq. ID No. 1810 | Cyto | |
| 878c | Seq. ID No. 1811 | Seq. ID No. 1812 | Cyto | 0 |
| 880a | Seq. ID No. 1813 | Seq. ID No. 1814 | IM | 0 |
| 880b | Seq. ID No. 1815 | Seq. ID No. 1816 | IM | 0 |
| 880c | Seq. ID No. 1817 | Seq. ID No. 1818 | IM | 0 |
| 888 | Seq. ID No. 1825 | Seq. ID No. 1826 | Cyto | |
| 890a | Seq. ID No. 1827 | Seq. ID No. 1828 | Cyto | |
| 890b | Seq. ID No. 1829 | Seq. ID No. 1830 | Cyto | |
| 894 | Seq. ID No. 1831 | Seq. ID No. 1832 | Cyto | |
| 904 | Seq. ID No. 1833 | Seq. ID No. 1834 | Peri | |
| 907a | Seq. ID No. 1835 | Seq. ID No. 1836 | Cyto | 1 |
| 907b | Seq. ID No. 1837 | Seq. ID No. 1838 | Cyto | 1 |
| 908b | Seq. ID No. 1841 | Seq. ID No. 1842 | IM | 9 |
| 908c | Seq. ID No. 1843 | Seq. ID No. 1844 | IM | 9 |
| 911 | Seq. ID No. 1845 | Seq. ID No. 1846 | Cyto | |
| 912 | Seq. ID No. 1847 | Seq. ID No. 1848 | Cyto | |
| 916 | Seq. ID No. 1849 | Seq. ID No. 1850 | Cyto | 1 |
| 917 | Seq. ID No. 1851 | Seq. ID No. 1852 | Cyto | |
| 918b | Seq. ID No. 1853 | Seq. ID No. 1854 | Cyto | |
| 918c | Seq. ID No. 1855 | Seq. ID No. 1856 | Cyto | |
| 923 | Seq. ID No. 1859 | Seq. ID No. 1860 | Cyto | 0 |
| 925a | Seq. ID No. 1861 | Seq. ID No. 1862 | Cyto | 0 |
| 925b | Seq. ID No. 1863 | Seq. ID No. 1864 | Cyto | 0 |
| 926 | Seq. ID No. 1865 | Seq. ID No. 1866 | Cyto | 0 |
| 927 | Seq. ID No. 1867 | Seq. ID No. 1868 | Cyto | |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|------------|-------------------|-----------------------|-------|-----|
| 929b | Seq. ID No. 1871 | Seq. ID No. 1872 | Cyto | 1 |
| 930 | Seq. ID No. 1873 | Seq. ID No. 1874 | Cyto | 1 |
| 932 | Seq. ID No. 1877 | Seq. ID No. 1878 | Cyto | 1 |
| 934a | Seq. ID No. 1879 | Seq. ID No. 1880 | Cyto | |
| 934b | Seq. ID No. 1881 | Seq. ID No. 1882 | Cyto | |
| 934c | Seq. ID No. 1883 | Seq. ID No. 1884 | Cyto | 0 |
| 934d | Seq. ID No. 1885 | Seq. ID No. 1886 | Cyto | 0 |
| 935 | Seq. ID No. 1887 | Seq. ID No. 1888 | Cyto | 0 |
| 938 | Seq. ID No. 1889 | Seq. ID No. 1890 | Cyto | 1 |
| 942 | Seq. ID No. 1897 | Seq. ID No. 1898 | IM | |
| 943 | Seq. ID No. 1899 | Seq. ID No. 1900 | Cyto | |
| 944a | Seq. ID No. 1901 | Seq. ID No. 1902 | Cyto | 0 |
| 944b | Seq. ID No. 1903 | Seq. ID No. 1904 | Cyto | 0 |
| 946 | Seq. ID No. 1905 | Seq. ID No. 1906 | Cyto | 0 |
| 949a | Seq. ID No. 1907 | Seq. ID No. 1908 | Cyto | |
| 949b | Seq. ID No. 1909 | Seq. ID No. 1910 | IM | 1 |
| 949c | Seq. ID No. 1911 | Seq. ID No. 1912 | IM | 1 |
| 949d | Seq. ID No. 1913 | Seq. ID No. 1914 | IM | 1 |
| 952a | Seq. ID No. 1921 | Seq. ID No. 1922 | IM | 1 |
| 954 | Seq. ID No. 1925 | Seq. ID No. 1926 | Cyto | 0 |
| 956 | Seq. ID No. 1931 | Seq. ID No. 1932 | IM | 0 |
| 958a | Seq. ID No. 1933 | Seq. ID No. 1934 | Cyto | |
| 958b | Seq. ID No. 1935 | Seq. ID No. 1936 | Cyto | |
| 959 | Seq. ID No. 1937 | Seq. ID No. 1938 | Cyto | |
| 961a | Seq. ID No. 1939 | Seq. ID No. 1940 | Cyto | |
| 961b | Seq. ID No. 1941 | Seq. ID No. 1942 | Cyto | |
| 961c | Seq. ID No. 1943 | Seq. ID No. 1944 | Cyto | |
| 963 | Seq. ID No. 1945 | Seq. ID No. 1946 | Cyto | 0 |
| 965a | Seq. ID No. 1947 | Seq. ID No. 1948 | Cyto | |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|------------|-------------------|-----------------------|-------|-----|
| 965b | Seq. ID No. 1949 | Seq. ID No. 1950 | Cyto | |
| 966a | Seq. ID No. 1951 | Seq. ID No. 1952 | Cyto | |
| 966b | Seq. ID No. 1953 | Seq. ID No. 1954 | Cyto | |
| 967a | Seq. ID No. 1955 | Seq. ID No. 1956 | IM | |
| 967b | Seq. ID No. 1957 | Seq. ID No. 1958 | Cyto | |
| 968 | Seq. ID No. 1959 | Seq. ID No. 1960 | Cyto | 0 |
| 969 | Seq. ID No. 1961 | Seq. ID No. 1962 | IM | |
| 972a | Seq. ID No. 1963 | Seq. ID No. 1964 | IM | |
| 972b | Seq. ID No. 1965 | Seq. ID No. 1966 | IM | |
| 976 | Seq. ID No. 1967 | Seq. ID No. 1968 | Cyto | |
| 977b | Seq. ID No. 1971 | Seq. ID No. 1972 | Cyto | 1 |
| 978a | Seq. ID No. 1973 | Seq. ID No. 1974 | Cyto | |
| 978b | Seq. ID No. 1975 | Seq. ID No. 1976 | Cyto | |
| 979 | Seq. ID No. 1977 | Seq. ID No. 1978 | IM | 1 |
| 980 | Seq. ID No. 1979 | Seq. ID No. 1980 | Cyto | 0 |
| 982 | Seq. ID No. 1983 | Seq. ID No. 1984 | Cyto | |
| 984a | Seq. ID No. 1985 | Seq. ID No. 1986 | Cyto | |
| 984b | Seq. ID No. 1987 | Seq. ID No. 1988 | Cyto | |
| 986 | Seq. ID No. 1989 | Seq. ID No. 1990 | Cyto | |
| 988b | Seq. ID No. 1995 | Seq. ID No. 1996 | IM | 6 |
| 988c | Seq. ID No. 1997 | Seq. ID No. 1998 | IM | 6 |
| 988d | Seq. ID No. 1999 | Seq. ID No. 2000 | IM | 6 |
| 991 | Seq. ID No. 2001 | Seq. ID No. 2002 | IM | |
| 992 | Seq. ID No. 2003 | Seq. ID No. 2004 | Cyto | 0 |
| 994 | Seq. ID No. 2007 | Seq. ID No. 2008 | Cyto | 2 |
| 995 | Seq. ID No. 2009 | Seq. ID No. 2010 | IM | 1 |
| 997 | Seq. ID No. 2011 | Seq. ID No. 2012 | IM | |
| 998b | Seq. ID No. 2015 | Seq. ID No. 2016 | IM | 5 |
| 1000 | Seq. ID No. 2021 | Seq. ID No. 2022 | Cyto | 1 |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|------------|-------------------|-----------------------|-------|-----|
| 1001 | Seq. ID No. 2023 | Seq. ID No. 2024 | Cyto | |
| 1004a | Seq. ID No. 2029 | Seq. ID No. 2030 | IM | 1 |
| 1004b | Seq. ID No. 2031 | Seq. ID No. 2032 | IM | 1 |
| 1007 | Seq. ID No. 2037 | Seq. ID No. 2038 | Cyto | |
| 1012 | Seq. ID No. 2039 | Seq. ID No. 2040 | IM | 1 |
| 1013b | Seq. ID No. 2043 | Seq. ID No. 2044 | IM | 6 |
| 1013c | Seq. ID No. 2045 | Seq. ID No. 2046 | IM | 6 |
| 1016c | Seq. ID No. 2047 | Seq. ID No. 2048 | Cyto | |
| 1017b | Seq. ID No. 2051 | Seq. ID No. 2052 | IM | 5 |
| 1018a | Seq. ID No. 2057 | Seq. ID No. 2058 | Cyto | |
| 1018b | Seq. ID No. 2059 | Seq. ID No. 2060 | Cyto | |
| 1021a | Seq. ID No. 2061 | Seq. ID No. 2062 | Cyto | 1 |
| 1021b | Seq. ID No. 2063 | Seq. ID No. 2064 | Cyto | 1 |
| 1021c | Seq. ID No. 2065 | Seq. ID No. 2066 | Cyto | 1 |
| 1024 | Seq. ID No. 2067 | Seq. ID No. 2068 | Cyto | |
| 1025 | Seq. ID No. 2069 | Seq. ID No. 2070 | Cyto | |
| 1026 | Seq. ID No. 2071 | Seq. ID No. 2072 | Cyto | |
| 1029 | Seq. ID No. 2073 | Seq. ID No. 2074 | Cyto | |
| 1033a | Seq. ID No. 2075 | Seq. ID No. 2076 | IM | 0 |
| 1033b | Seq. ID No. 2077 | Seq. ID No. 2078 | IM | 0 |
| 1033c | Seq. ID No. 2079 | Seq. ID No. 2080 | IM | 0 |
| 1035a | Seq. ID No. 2081 | Seq. ID No. 2082 | IM | 1 |
| 1035b | Seq. ID No. 2083 | Seq. ID No. 2084 | IM | 1 |
| 1035c | Seq. ID No. 2085 | Seq. ID No. 2086 | IM | 1 |
| 1037 | Seq. ID No. 2093 | Seq. ID No. 2094 | Cyto | |
| 1039a | Seq. ID No. 2095 | Seq. ID No. 2096 | Cyto | 0 |
| 1039b | Seq. ID No. 2097 | Seq. ID No. 2098 | Cyto | 0 |
| 1041 | Seq. ID No. 2099 | Seq. ID No. 2100 | Cyto | |
| 1042a | Seq. ID No. 2101 | Seq. ID No. 2102 | Cyto | 1 |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|------------|-------------------|-----------------------|-------|-----|
| 1042b | Seq. ID No. 2103 | Seq. ID No. 2104 | Cyto | 1 |
| 1044d | Seq. ID No. 2111 | Seq. ID No. 2112 | IM | 3 |
| 1049a | Seq. ID No. 2117 | Seq. ID No. 2118 | Cyto | 0 |
| 1049b | Seq. ID No. 2119 | Seq. ID No. 2120 | Cyto | 0 |
| 1055 | Seq. ID No. 2129 | Seq. ID No. 2130 | Cyto | |
| 1055a | Seq. ID No. 2131 | Seq. ID No. 2132 | Cyto | |
| 1056b | Seq. ID No. 2133 | Seq. ID No. 2134 | Cyto | |
| 1057 | Seq. ID No. 2135 | Seq. ID No. 2136 | Cyto | 0 |
| 1058 | Seq. ID No. 2137 | Seq. ID No. 2138 | Cyto | 1 |
| 1060a | Seq. ID No. 2139 | Seq. ID No. 2140 | IM | 1 |
| 1060b | Seq. ID No. 2141 | Seq. ID No. 2142 | IM | 1 |
| 1062 | Seq. ID No. 2143 | Seq. ID No. 2144 | Cyto | |
| 1063 | Seq. ID No. 2145 | Seq. ID No. 2146 | Cyto | 1 |
| 1064 | Seq. ID No. 2147 | Seq. ID No. 2148 | Cyto | |
| 1065c | Seq. ID No. 2153 | Seq. ID No. 2154 | IM | 1 |
| 1069 | Seq. ID No. 2161 | Seq. ID No. 2162 | IM | 1 |
| 1070a | Seq. ID No. 2163 | Seq. ID No. 2164 | Cyto | |
| 1070b | Seq. ID No. 2165 | Seq. ID No. 2166 | Cyto | |
| 1076a | Seq. ID No. 2167 | Seq. ID No. 2168 | IM | 2 |
| 1076b | Seq. ID No. 2169 | Seq. ID No. 2170 | IM | 2 |
| 1077c | Seq. ID No. 2175 | Seq. ID No. 2176 | IM | 12 |
| 1077e | Seq. ID No. 2179 | Seq. ID No. 2180 | IM | 15 |
| 1079a | Seq. ID No. 2181 | Seq. ID No. 2182 | Cyto | |
| 1079b | Seq. ID No. 2183 | Seq. ID No. 2184 | Cyto | |
| 1080a | Seq. ID No. 2185 | Seq. ID No. 2186 | Cyto | |
| 1081b | Seq. ID No. 2189 | Seq. ID No. 2190 | IM | 1 |
| 1085 | Seq. ID No. 2193 | Seq. ID No. 2194 | Cyto | |
| 1086 | Seq. ID No. 2195 | Seq. ID No. 2196 | IM | 1 |
| 1087a | Seq. ID No. 2197 | Seq. ID No. 2198 | IM | 0 |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|---------------|-------------------|-----------------------|-------|-----|
| 1087b | Seq. ID No. 2199 | Seq. ID No. 2200 | IM | 0 |
| 1091a | Seq. ID No. 2201 | Seq. ID No. 2202 | Cyto | |
| 1091b | Seq. ID No. 2203 | Seq. ID No. 2204 | Peri | |
| 1094b | Seq. ID No. 2207 | Seq. ID No. 2208 | IM | 2 |
| 1095a | Seq. ID No. 2209 | Seq. ID No. 2210 | Cyto | |
| 1095b | Seq. ID No. 2211 | Seq. ID No. 2212 | Cyto | |
| 1096a | Seq. ID No. 2213 | Seq. ID No. 2214 | Cyto | 0 |
| 1096b | Seq. ID No. 2215 | Seq. ID No. 2216 | Cyto | 0 |
| 1096c | Seq. ID No. 2217 | Seq. ID No. 2218 | Cyto | 0 |
| 1097 | Seq. ID No. 2219 | Seq. ID No. 2220 | IM | 2 |
| 1098b | Seq. ID No. 2221 | Seq. ID No. 2222 | IM | 2 |
| 1100 | Seq. ID No. 2223 | Seq. ID No. 2224 | Cyto | |
| 1101a | Seq. ID No. 2225 | Seq. ID No. 2226 | Cyto | |
| 1101b | Seq. ID No. 2227 | Seq. ID No. 2228 | Cyto | |
| 1104 | Seq. ID No. 2229 | Seq. ID No. 2230 | Cyto | |
| 1106 | Seq. ID No. 2231 | Seq. ID No. 2232 | Cyto | |
| 1108a | Seq. ID No. 2233 | Seq. ID No. 2234 | Cyto | |
| 1108b | Seq. ID No. 2235 | Seq. ID No. 2236 | Cyto | |
| 1111c | Seq. ID No. 2241 | Seq. ID No. 2242 | IM | 8 |
| 1112a | Seq. ID No. 2243 | Seq. ID No. 2244 | IM | 1 |
| 1126a | Seq. ID No. 2247 | Seq. ID No. 2248 | IM | 3 |
| 1127 | Seq. ID No. 2253 | Seq. ID No. 2254 | Cyto | |
| 1131 | Seq. ID No. 2257 | Seq. ID No. 2258 | Cyto | 1 |
| 1135a | Seq. ID No. 2261 | Seq. ID No. 2262 | IM | 1 |
| 1135b | Seq. ID No. 2263 | Seq. ID No. 2264 | IM | 1 |
| 1136a | Seq. ID No. 2265 | Seq. ID No. 2266 | IM | |
| 1136b | Seq. ID No. 2267 | Seq. ID No. 2268 | IM | |
| 1138 | Seq. ID No. 2269 | Seq. ID No. 2270 | Cyto | |
| 1140b | Seq. ID No. 2273 | Seq. ID No. 2274 | IM | 3 |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|---------------|-------------------|-----------------------|-------|-----|
| 1140c | Seq. ID No. 2275 | Seq. ID No. 2276 | IM | 6 |
| 1141a | Seq. ID No. 2277 | Seq. ID No. 2278 | Cyto | 1 |
| 1141b | Seq. ID No. 2279 | Seq. ID No. 2280 | Cyto | 1 |
| 1142 | Seq. ID No. 2281 | Seq. ID No. 2282 | Cyto | |
| 1144b | Seq. ID No. 2285 | Seq. ID No. 2286 | IM | 4 |
| 1144c | Seq. ID No. 2287 | Seq. ID No. 2288 | IM | 5 |
| 1146e | Seq. ID No. 2297 | Seq. ID No. 2298 | IM | 10 |
| 1148 | Seq. ID No. 2299 | Seq. ID No. 2300 | Cyto | 0 |
| 1149 | Seq. ID No. 2301 | Seq. ID No. 2302 | IM | 0 |
| 1152d | Seq. ID No. 2309 | Seq. ID No. 2310 | IM | 7 |
| 1152e | Seq. ID No. 2311 | Seq. ID No. 2312 | IM | 8 |
| 1152f | Seq. ID No. 2313 | Seq. ID No. 2314 | IM | 8 |
| 1152g | Seq. ID No. 2315 | Seq. ID No. 2316 | IM | 8 |
| 1158a | Seq. ID No. 2331 | Seq. ID No. 2332 | Cyto | |
| 1160 | Seq. ID No. 2335 | Seq. ID No. 2336 | Cyto | |
| 1161a | Seq. ID No. 2337 | Seq. ID No. 2338 | Cyto | |
| 1161b | Seq. ID No. 2339 | Seq. ID No. 2340 | Cyto | |
| 1162 | Seq. ID No. 2341 | Seq. ID No. 2342 | Cyto | |
| 1166 | Seq. ID No. 2345 | Seq. ID No. 2346 | Cyto | |
| 1170 | Seq. ID No. 2359 | Seq. ID No. 2360 | Cyto | 0 |
| 1171a | Seq. ID No. 2361 | Seq. ID No. 2362 | Cyto | |
| 1171c | Seq. ID No. 2363 | Seq. ID No. 2364 | Cyto | |
| 1174 | Seq. ID No. 2369 | Seq. ID No. 2370 | Cyto | 2 |
| 1177 | Seq. ID No. 2373 | Seq. ID No. 2374 | Cyto | 1 |
| 1179a | Seq. ID No. 2377 | Seq. ID No. 2378 | Cyto | 0 |
| 1179b | Seq. ID No. 2379 | Seq. ID No. 2380 | Cyto | 0 |
| 1179c | Seq. ID No. 2381 | Seq. ID No. 2382 | Cyto | 0 |
| 1180a | Seq. ID No. 2383 | Seq. ID No. 2384 | Cyto | 1 |
| 1180b | Seq. ID No. 2385 | Seq. ID No. 2386 | IM | 2 |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|---------------|-------------------|-----------------------|-------|-----|
| 1182b | Seq. ID No. 2395 | Seq. ID No. 2396 | IM | 2 |
| 1183a | Seq. ID No. 2397 | Seq. ID No. 2398 | IM | 0 |
| 1183b | Seq. ID No. 2399 | Seq. ID No. 2400 | IM | 0 |
| 1184 | Seq. ID No. 2401 | Seq. ID No. 2402 | Cyto | 1 |
| 1185a | Seq. ID No. 2403 | Seq. ID No. 2404 | Cyto | 0 |
| 1185b | Seq. ID No. 2405 | Seq. ID No. 2406 | Cyto | 0 |
| 1186b | Seq. ID No. 2409 | Seq. ID No. 2410 | IM | 5 |
| 1188a | Seq. ID No. 2411 | Seq. ID No. 2412 | IM | 2 |
| 1188b | Seq. ID No. 2413 | Seq. ID No. 2414 | IM | 4 |
| 1188c | Seq. ID No. 2415 | Seq. ID No. 2416 | IM | 4 |
| 1191 | Seq. ID No. 2417 | Seq. ID No. 2418 | IM | 0 |
| 1194 | Seq. ID No. 2423 | Seq. ID No. 2424 | IM | 1 |
| 1198 | Seq. ID No. 2431 | Seq. ID No. 2432 | Cyto | |
| 1199b | Seq. ID No. 2435 | Seq. ID No. 2436 | IM | 3 |
| 1200 | Seq. ID No. 2437 | Seq. ID No. 2438 | Cyto | 0 |
| 1201 | Seq. ID No. 2439 | Seq. ID No. 2440 | Cyto | |
| 1202a | Seq. ID No. 2441 | Seq. ID No. 2442 | IM | 3 |
| 1202b | Seq. ID No. 2443 | Seq. ID No. 2444 | IM | 3 |
| 1205 | Seq. ID No. 2445 | Seq. ID No. 2446 | IM | 3 |
| 1206 | Seq. ID No. 2447 | Seq. ID No. 2448 | Cyto | 0 |
| 1208 | Seq. ID No. 2451 | Seq. ID No. 2452 | Cyto | |
| 1209 | Seq. ID No. 2453 | Seq. ID No. 2454 | IM | 4 |
| 1210a | Seq. ID No. 2455 | Seq. ID No. 2456 | IM | 3 |
| 1210b | Seq. ID No. 2457 | Seq. ID No. 2458 | IM | 4 |
| 1213a | Seq. ID No. 2461 | Seq. ID No. 2462 | Cyto | 1 |
| 1213b | Seq. ID No. 2463 | Seq. ID No. 2464 | Cyto | 1 |
| 1214 | Seq. ID No. 2465 | Seq. ID No. 2466 | IM | |
| 1215a | Seq. ID No. 2467 | Seq. ID No. 2468 | Cyto | 0 |
| 1215b | Seq. ID No. 2469 | Seq. ID No. 2470 | Cyto | 0 |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|------------|-------------------|-----------------------|-------|-----|
| 1217c | Seq. ID No. 2471 | Seq. ID No. 2472 | Cyto | |
| 1218a | Seq. ID No. 2473 | Seq. ID No. 2474 | IM | 2 |
| 1218b | Seq. ID No. 2475 | Seq. ID No. 2476 | IM | 2 |
| 1219 | Seq. ID No. 2477 | Seq. ID No. 2478 | Cyto | |
| 1220 | Seq. ID No. 2479 | Seq. ID No. 2480 | Cyto | |
| 1221a | Seq. ID No. 2481 | Seq. ID No. 2482 | IM | |
| 1221b | Seq. ID No. 2483 | Seq. ID No. 2484 | IM | |
| 1223 | Seq. ID No. 2485 | Seq. ID No. 2486 | Cyto | |
| 1226 | Seq. ID No. 2495 | Seq. ID No. 2496 | Cyto | |
| 1230 | Seq. ID No. 2505 | Seq. ID No. 2506 | Cyto | 0 |
| 1233a | Seq. ID No. 2509 | Seq. ID No. 2510 | IM | |
| 1233b | Seq. ID No. 2511 | Seq. ID No. 2512 | IM | |
| 1233c | Seq. ID No. 2513 | Seq. ID No. 2514 | IM | |
| 1234c | Seq. ID No. 2519 | Seq. ID No. 2520 | IM | 6 |
| 1235 | Seq. ID No. 2521 | Seq. ID No. 2522 | Cyto | 1 |
| 1240 | Seq. ID No. 2529 | Seq. ID No. 2530 | Cyto | |
| 1244 | Seq. ID No. 2539 | Seq. ID No. 2540 | Cyto | 0 |
| 1245d | Seq. ID No. 2547 | Seq. ID No. 2548 | IM | 12 |
| 1245e | Seq. ID No. 2549 | Seq. ID No. 2550 | IM | 12 |
| 1246a | Seq. ID No. 2551 | Seq. ID No. 2552 | Cyto | |
| 1246b | Seq. ID No. 2553 | Seq. ID No. 2554 | Cyto | |
| 1250c | Seq. ID No. 2559 | Seq. ID No. 2560 | IM | 9 |
| 1250d | Seq. ID No. 2561 | Seq. ID No. 2562 | IM | 10 |
| 1250e | Seq. ID No. 2563 | Seq. ID No. 2564 | IM | 10 |
| 1251b | Seq. ID No. 2567 | Seq. ID No. 2568 | IM | 3 |
| 1253c | Seq. ID No. 2573 | Seq. ID No. 2574 | IM | 7 |
| 1253d | Seq. ID No. 2575 | Seq. ID No. 2576 | IM | 7 |
| 1256 | Seq. ID No. 2577 | Seq. ID No. 2578 | Cyto | 1 |
| 1257a | Seq. ID No. 2579 | Seq. ID No. 2580 | Cyto | |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|---------------|-------------------|-----------------------|-------|-----|
| 1257b | Seq. ID No. 2581 | Seq. ID No. 2582 | Cyto | |
| 1258b | Seq. ID No. 2585 | Seq. ID No. 2586 | IM | 7 |
| 1258c | Seq. ID No. 2587 | Seq. ID No. 2588 | IM | 7 |
| 1258d | Seq. ID No. 2589 | Seq. ID No. 2590 | IM | 7 |
| 1263 | Seq. ID No. 2593 | Seq. ID No. 2594 | Cyto | 0 |
| 1265 | Seq. ID No. 2595 | Seq. ID No. 2596 | Cyto | 1 |
| 1267b | Seq. ID No. 2603 | Seq. ID No. 2604 | IM | 3 |
| 1268a | Seq. ID No. 2605 | Seq. ID No. 2606 | IM | 3 |
| 1269 | Seq. ID No. 2609 | Seq. ID No. 2610 | Cyto | |
| 1271 | Seq. ID No. 2613 | Seq. ID No. 2614 | Cyto | |
| 1272a | Seq. ID No. 2615 | Seq. ID No. 2616 | Cyto | |
| 1272b | Seq. ID No. 2617 | Seq. ID No. 2618 | Cyto | 0 |
| 1273 | Seq. ID No. 2619 | Seq. ID No. 2620 | Cyto | 0 |
| 1275b | Seq. ID No. 2623 | Seq. ID No. 2624 | Cyto | 1 |
| 1277 | Seq. ID No. 2625 | Seq. ID No. 2626 | Cyto | 1 |
| 1279 | Seq. ID No. 2631 | Seq. ID No. 2632 | Cyto | 0 |
| 1281 | Seq. ID No. 2633 | Seq. ID No. 2634 | Cyto | 0 |
| 1283a | Seq. ID No. 2635 | Seq. ID No. 2636 | Cyto | |
| 1283b | Seq. ID No. 2637 | Seq. ID No. 2638 | Cyto | |
| 1283c | Seq. ID No. 2639 | Seq. ID No. 2640 | Cyto | |
| 1284 | Seq. ID No. 2641 | Seq. ID No. 2642 | Cyto | |
| 1285a | Seq. ID No. 2643 | Seq. ID No. 2644 | Cyto | 0 |
| 1285b | Seq. ID No. 2645 | Seq. ID No. 2646 | Cyto | 0 |
| 1287a | Seq. ID No. 2647 | Seq. ID No. 2648 | Cyto | |
| 1287b | Seq. ID No. 2649 | Seq. ID No. 2650 | Cyto | |
| 1289 | Seq. ID No. 2653 | Seq. ID No. 2654 | IM | 1 |
| 1290 | Seq. ID No. 2655 | Seq. ID No. 2656 | Cyto | |
| 1293a | Seq. ID No. 2657 | Seq. ID No. 2658 | Cyto | |
| 1293b | Seq. ID No. 2659 | Seq. ID No. 2660 | Cyto | |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|---------------|-------------------|-----------------------|-------|-----|
| 1294a | Seq. ID No. 2661 | Seq. ID No. 2662 | Cyto | |
| 1295 | Seq. ID No. 2663 | Seq. ID No. 2664 | Cyto | |
| 1297a | Seq. ID No. 2665 | Seq. ID No. 2666 | Cyto | |
| 1297b | Seq. ID No. 2667 | Seq. ID No. 2668 | Cyto | |
| 1300 | Seq. ID No. 2669 | Seq. ID No. 2670 | Cyto | |
| 1302 | Seq. ID No. 2671 | Seq. ID No. 2672 | Cyto | |
| 1305a | Seq. ID No. 2673 | Seq. ID No. 2674 | Cyto | |
| 1305b | Seq. ID No. 2675 | Seq. ID No. 2676 | Cyto | |
| 1305c | Seq. ID No. 2677 | Seq. ID No. 2678 | Cyto | |
| 1308d | Seq. ID No. 2685 | Seq. ID No. 2686 | IM | 4 |
| 1308e | Seq. ID No. 2687 | Seq. ID No. 2688 | IM | 4 |
| 1311 | Seq. ID No. 2689 | Seq. ID No. 2690 | Cyto | |
| 1320c | Seq. ID No. 2709 | Seq. ID No. 2710 | IM | 5 |
| 1321 | Seq. ID No. 2711 | Seq. ID No. 2712 | Cyto | |
| 1322a | Seq. ID No. 2713 | Seq. ID No. 2714 | Cyto | |
| 1322b | Seq. ID No. 2715 | Seq. ID No. 2716 | Cyto | |
| 1324 | Seq. ID No. 2719 | Seq. ID No. 2720 | Cyto | |
| 1326a | Seq. ID No. 2721 | Seq. ID No. 2722 | Cyto | |
| 1326b | Seq. ID No. 2723 | Seq. ID No. 2724 | Cyto | |
| 1326c | Seq. ID No. 2725 | Seq. ID No. 2726 | Cyto | |
| 1333 | Seq. ID No. 2727 | Seq. ID No. 2728 | Cyto | 0 |
| 1335b | Seq. ID No. 2735 | Seq. ID No. 2736 | IM | 3 |
| 1337 | Seq. ID No. 2737 | Seq. ID No. 2738 | Cyto | |
| 1338 | Seq. ID No. 2739 | Seq. ID No. 2740 | IM | 1 |
| 1340a | Seq. ID No. 2741 | Seq. ID No. 2742 | IM | 1 |
| 1340b | Seq. ID No. 2743 | Seq. ID No. 2744 | IM | 1 |
| 1341a | Seq. ID No. 2745 | Seq. ID No. 2746 | IM | 3 |
| 1341c | Seq. ID No. 2747 | Seq. ID No. 2748 | IM | 4 |
| 1344a | Seq. ID No. 2749 | Seq. ID No. 2750 | Cyto | 0 |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|---------------|-------------------|-----------------------|-------|-----|
| 1344b | Seq. ID No. 2751 | Seq. ID No. 2752 | Cyto | 0 |
| 1348 | Seq. ID No. 2753 | Seq. ID No. 2754 | IM | 5 |
| 1349a | Seq. ID No. 2755 | Seq. ID No. 2756 | IM | 1 |
| 1349b | Seq. ID No. 2757 | Seq. ID No. 2758 | IM | 1 |
| 1349c | Seq. ID No. 2759 | Seq. ID No. 2760 | IM | 1 |
| 1350a | Seq. ID No. 2761 | Seq. ID No. 2762 | Cyto | |
| 1350b | Seq. ID No. 2763 | Seq. ID No. 2764 | Cyto | |
| 1353 | Seq. ID No. 2765 | Seq. ID No. 2766 | Cyto | 2 |
| 1355 | Seq. ID No. 2767 | Seq. ID No. 2768 | Cyto | |
| 1358a | Seq. ID No. 2769 | Seq. ID No. 2770 | Cyto | 0 |
| 1358b | Seq. ID No. 2771 | Seq. ID No. 2772 | Cyto | 0 |
| 1359 | Seq. ID No. 2773 | Seq. ID No. 2774 | Cyto | 1 |
| 1361 | Seq. ID No. 2775 | Seq. ID No. 2776 | Cyto | |
| 1364a | Seq. ID No. 2777 | Seq. ID No. 2778 | Cyto | |
| 1364b | Seq. ID No. 2779 | Seq. ID No. 2780 | Cyto | |
| 1364c | Seq. ID No. 2781 | Seq. ID No. 2782 | Cyto | |
| 1366b | Seq. ID No. 2787 | Seq. ID No. 2788 | IM | 1 |
| 1367 | Seq. ID No. 2789 | Seq. ID No. 2790 | Cyto | 1 |
| 1368 | Seq. ID No. 2791 | Seq. ID No. 2792 | Cyto | 0 |
| 1371 | Seq. ID No. 2793 | Seq. ID No. 2794 | Cyto | |
| 1373a | Seq. ID No. 2795 | Seq. ID No. 2796 | Cyto | |
| 1373b | Seq. ID No. 2797 | Seq. ID No. 2798 | Cyto | |
| 1374 | Seq. ID No. 2799 | Seq. ID No. 2800 | IM | |
| 1377 | Seq. ID No. 2803 | Seq. ID No. 2804 | IM | 0 |
| 1378 | Seq. ID No. 2805 | Seq. ID No. 2806 | IM | 0 |
| 1379 | Seq. ID No. 2807 | Seq. ID No. 2808 | IM | 1 |
| 1381a | Seq. ID No. 2811 | Seq. ID No. 2812 | IM | 1 |
| 1383 | Seq. ID No. 2817 | Seq. ID No. 2818 | Cyto | |
| 1386a | Seq. ID No. 2825 | Seq. ID No. 2826 | IM | 1 |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|---------------|-------------------|-----------------------|-------|-----|
| 1386b | Seq. ID No. 2827 | Seq. ID No. 2828 | IM | 1 |
| 1387a | Seq. ID No. 2829 | Seq. ID No. 2830 | OM | 1 |
| 1394 | Seq. ID No. 2843 | Seq. ID No. 2844 | Cyto | 1 |
| 1396 | Seq. ID No. 2847 | Seq. ID No. 2848 | Cyto | |
| 1397 | Seq. ID No. 2849 | Seq. ID No. 2850 | Peri | |
| 1398 | Seq. ID No. 2851 | Seq. ID No. 2852 | Cyto | |
| 1400 | Seq. ID No. 2857 | Seq. ID No. 2858 | IM | 1 |
| 1405 | Seq. ID No. 2863 | Seq. ID No. 2864 | IM | 2 |
| 1407b | Seq. ID No. 2865 | Seq. ID No. 2866 | IM | 1 |
| 1408 | Seq. ID No. 2867 | Seq. ID No. 2868 | IM | 5 |
| 1409 | Seq. ID No. 2869 | Seq. ID No. 2870 | IM | 1 |
| 1410 | Seq. ID No. 2871 | Seq. ID No. 2872 | Cyto | |
| 1411b | Seq. ID No. 2875 | Seq. ID No. 2876 | IM | 4 |
| 1411c | Seq. ID No. 2877 | Seq. ID No. 2878 | IM | 6 |
| 1412a | Seq. ID No. 2879 | Seq. ID No. 2880 | IM | 8 |
| 1414a | Seq. ID No. 2883 | Seq. ID No. 2884 | IM | 0 |
| 1414b | Seq. ID No. 2885 | Seq. ID No. 2886 | IM | 0 |
| 1414c | Seq. ID No. 2887 | Seq. ID No. 2888 | IM | 0 |
| 1415 | Seq. ID No. 2889 | Seq. ID No. 2890 | Cyto | |
| 1416 | Seq. ID No. 2891 | Seq. ID No. 2892 | Cyto | |
| 1419 | Seq. ID No. 2895 | Seq. ID No. 2896 | IM | |
| 1420a | Seq. ID No. 2897 | Seq. ID No. 2898 | IM | 0 |
| 1420b | Seq. ID No. 2899 | Seq. ID No. 2900 | IM | 0 |
| 1422 | Seq. ID No. 2901 | Seq. ID No. 2902 | Cyto | 0 |
| 1423 | Seq. ID No. 2903 | Seq. ID No. 2904 | Cyto | |
| 1426b | Seq. ID No. 2907 | Seq. ID No. 2908 | IM | 6 |
| 1427a | Seq. ID No. 2909 | Seq. ID No. 2910 | Cyto | |
| 1427b | Seq. ID No. 2911 | Seq. ID No. 2912 | Cyto | |
| 1428 | Seq. ID No. 2913 | Seq. ID No. 2914 | Cyto | |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|---------------|-------------------|-----------------------|-------|-----|
| 1429a | Seq. ID No. 2915 | Seq. ID No. 2916 | Cyto | |
| 1429b | Seq. ID No. 2917 | Seq. ID No. 2918 | IM | |
| 1431 | Seq. ID No. 2919 | Seq. ID No. 2920 | Cyto | 0 |
| 1432 | Seq. ID No. 2921 | Seq. ID No. 2922 | Cyto | 0 |
| 1433 | Seq. ID No. 2923 | Seq. ID No. 2924 | Cyto | 0 |
| 1434a | Seq. ID No. 2925 | Seq. ID No. 2926 | Cyto | 1 |
| 1434b | Seq. ID No. 2927 | Seq. ID No. 2928 | Cyto | 1 |
| 1437a | Seq. ID No. 2929 | Seq. ID No. 2930 | Cyto | 0 |
| 1437b | Seq. ID No. 2931 | Seq. ID No. 2932 | Cyto | 0 |
| 1437c | Seq. ID No. 2933 | Seq. ID No. 2934 | Cyto | 0 |
| 1439d | Seq. ID No. 2943 | Seq. ID No. 2944 | IM | 7 |
| 1439e | Seq. ID No. 2945 | Seq. ID No. 2946 | IM | 7 |
| 1440d | Seq. ID No. 2953 | Seq. ID No. 2954 | IM | 12 |
| 1442a | Seq. ID No. 2955 | Seq. ID No. 2956 | Cyto | |
| 1442b | Seq. ID No. 2957 | Seq. ID No. 2958 | Cyto | |
| 1445a | Seq. ID No. 2959 | Seq. ID No. 2960 | Cyto | |
| 1445b | Seq. ID No. 2961 | Seq. ID No. 2962 | Cyto | |
| 1445c | Seq. ID No. 2963 | Seq. ID No. 2964 | Cyto | |
| 1446a | Seq. ID No. 2965 | Seq. ID No. 2966 | IM | 2 |
| 1446b | Seq. ID No. 2967 | Seq. ID No. 2968 | IM | 2 |
| 1447b | Seq. ID No. 2971 | Seq. ID No. 2972 | IM | 11 |
| 1451 | Seq. ID No. 2979 | Seq. ID No. 2980 | Cyto | |
| 1453 | Seq. ID No. 2985 | Seq. ID No. 2986 | IM | 5 |
| 1455a | Seq. ID No. 2989 | Seq. ID No. 2990 | Cyto | |
| 1456 | Seq. ID No. 2993 | Seq. ID No. 2994 | Cyto | |
| 1457c | Seq. ID No. 2999 | Seq. ID No. 3000 | IM | 8 |
| 1459 | Seq. ID No. 3001 | Seq. ID No. 3002 | IM | 1 |
| 1462a | Seq. ID No. 3003 | Seq. ID No. 3004 | IM | 5 |
| 1466b | Seq. ID No. 3015 | Seq. ID No. 3016 | IM | 2 |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|------------|-------------------|-----------------------|-------|-----|
| 1466c | Seq. ID No. 3017 | Seq. ID No. 3018 | IM | 2 |
| 1466d | Seq. ID No. 3019 | Seq. ID No. 3020 | IM | 2 |
| 1467 | Seq. ID No. 3021 | Seq. ID No. 3022 | Cyto | 2 |
| 1470c | Seq. ID No. 3033 | Seq. ID No. 3034 | IM | 8 |
| 1471 | Seq. ID No. 3035 | Seq. ID No. 3036 | IM | 6 |
| 1472b | Seq. ID No. 3037 | Seq. ID No. 3038 | IM | |
| 1472c | Seq. ID No. 3039 | Seq. ID No. 3040 | Cyto | |
| 1474 | Seq. ID No. 3041 | Seq. ID No. 3042 | Cyto | |
| 1476 | Seq. ID No. 3045 | Seq. ID No. 3046 | IM | 5 |
| 1477a | Seq. ID No. 3047 | Seq. ID No. 3048 | Cyto | 0 |
| 1477b | Seq. ID No. 3049 | Seq. ID No. 3050 | Cyto | 0 |
| 1479a | Seq. ID No. 3051 | Seq. ID No. 3052 | Cyto | |
| 1479b | Seq. ID No. 3053 | Seq. ID No. 3054 | Cyto | |
| 1482a | Seq. ID No. 3057 | Seq. ID No. 3058 | Cyto | 0 |
| 1482b | Seq. ID No. 3059 | Seq. ID No. 3060 | Cyto | 0 |
| 1483 | Seq. ID No. 3061 | Seq. ID No. 3062 | Cyto | |
| 1484b | Seq. ID No. 3065 | Seq. ID No. 3066 | IM | 4 |
| 1484c | Seq. ID No. 3067 | Seq. ID No. 3068 | IM | 4 |
| 1486 | Seq. ID No. 3069 | Seq. ID No. 3070 | Cyto | |
| 1488d | Seq. ID No. 3079 | Seq. ID No. 3080 | IM | 4 |
| 1488e | Seq. ID No. 3081 | Seq. ID No. 3082 | IM | 4 |
| 1488f | Seq. ID No. 3083 | Seq. ID No. 3084 | IM | 4 |
| 1488g | Seq. ID No. 3085 | Seq. ID No. 3086 | IM | 4 |
| 1489 | Seq. ID No. 3087 | Seq. ID No. 3088 | Cyto | |
| 1490 | Seq. ID No. 3089 | Seq. ID No. 3090 | Cyto | |
| 1494 | Seq. ID No. 3091 | Seq. ID No. 3092 | Cyto | |
| 1497 | Seq. ID No. 3093 | Seq. ID No. 3094 | Cyto | 0 |
| 1498a | Seq. ID No. 3095 | Seq. ID No. 3096 | Cyto | |
| 1498b | Seq. ID No. 3097 | Seq. ID No. 3098 | Cyto | |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|------------|-------------------|-----------------------|-------|-----|
| 1498c | Seq. ID No. 3099 | Seq. ID No. 3100 | Cyto | |
| 1498d | Seq. ID No. 3101 | Seq. ID No. 3102 | Cyto | |
| 1499 | Seq. ID No. 3103 | Seq. ID No. 3104 | Cyto | |
| 1502a | Seq. ID No. 3105 | Seq. ID No. 3106 | Cyto | |
| 1502b | Seq. ID No. 3107 | Seq. ID No. 3108 | Cyto | |
| 1503a | Seq. ID No. 3109 | Seq. ID No. 3110 | IM | 4 |
| 1503b | Seq. ID No. 3111 | Seq. ID No. 3112 | IM | 4 |
| 1506a | Seq. ID No. 3113 | Seq. ID No. 3114 | Cyto | 0 |
| 1506b | Seq. ID No. 3115 | Seq. ID No. 3116 | Cyto | 0 |
| 1506c | Seq. ID No. 3117 | Seq. ID No. 3118 | Cyto | 0 |
| 1508 | Seq. ID No. 3125 | Seq. ID No. 3126 | Cyto | 0 |
| 1510a | Seq. ID No. 3127 | Seq. ID No. 3128 | IM | 0 |
| 1510b | Seq. ID No. 3129 | Seq. ID No. 3130 | IM | 0 |
| 1510c | Seq. ID No. 3131 | Seq. ID No. 3132 | IM | 0 |
| 1510d | Seq. ID No. 3133 | Seq. ID No. 3134 | IM | 0 |
| 1511 | Seq. ID No. 3135 | Seq. ID No. 3136 | IM | 0 |
| 1512 | Seq. ID No. 3137 | Seq. ID No. 3138 | Cyto | |
| 1513a | Seq. ID No. 3139 | Seq. ID No. 3140 | Cyto | |
| 1513b | Seq. ID No. 3141 | Seq. ID No. 3142 | Cyto | |
| 1516 | Seq. ID No. 3143 | Seq. ID No. 3144 | Cyto | |
| 1517b | Seq. ID No. 3147 | Seq. ID No. 3148 | IM | 3 |
| 1517c | Seq. ID No. 3149 | Seq. ID No. 3150 | IM | 3 |
| 1518a | Seq. ID No. 3151 | Seq. ID No. 3152 | Cyto | 0 |
| 1518b | Seq. ID No. 3153 | Seq. ID No. 3154 | Cyto | 0 |
| 1523 | Seq. ID No. 3159 | Seq. ID No. 3160 | Cyto | 0 |
| 1528 | Seq. ID No. 3161 | Seq. ID No. 3162 | Cyto | |
| 1533a | Seq. ID No. 3167 | Seq. ID No. 3168 | IM | 0 |
| 1534a | Seq. ID No. 3169 | Seq. ID No. 3170 | Cyto | 0 |
| 1534b | Seq. ID No. 3171 | Seq. ID No. 3172 | Cyto | 0 |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|---------------|-------------------|-----------------------|-------|-----|
| 1536a | Seq. ID No. 3175 | Seq. ID No. 3176 | Cyto | |
| 1536b | Seq. ID No. 3177 | Seq. ID No. 3178 | Cyto | 0 |
| 1537 | Seq. ID No. 3179 | Seq. ID No. 3180 | Cyto | |
| 1542 | Seq. ID No. 3181 | Seq. ID No. 3182 | IM | 0 |
| 1544 | Seq. ID No. 3185 | Seq. ID No. 3186 | Cyto | 1 |
| 1547a | Seq. ID No. 3187 | Seq. ID No. 3188 | Cyto | |
| 1547b | Seq. ID No. 3189 | Seq. ID No. 3190 | Cyto | |
| 1548 | Seq. ID No. 3191 | Seq. ID No. 3192 | Cyto | |
| 1553a | Seq. ID No. 3195 | Seq. ID No. 3196 | Cyto | |
| 1553b | Seq. ID No. 3197 | Seq. ID No. 3198 | Cyto | |
| 1554a | Seq. ID No. 3199 | Seq. ID No. 3200 | IM | 1 |
| 1554c | Seq. ID No. 3203 | Seq. ID No. 3204 | IM | 3 |
| 1555 | Seq. ID No. 3205 | Seq. ID No. 3206 | IM | 1 |
| 1556a | Seq. ID No. 3207 | Seq. ID No. 3208 | Cyto | |
| 1556b | Seq. ID No. 3209 | Seq. ID No. 3210 | Cyto | |
| 1556c | Seq. ID No. 3211 | Seq. ID No. 3212 | Cyto | |
| 1559b | Seq. ID No. 3221 | Seq. ID No. 3222 | IM | 7 |
| 1563 | Seq. ID No. 3223 | Seq. ID No. 3224 | Cyto | |
| 1564a | Seq. ID No. 3225 | Seq. ID No. 3226 | Cyto | 1 |
| 1564b | Seq. ID No. 3227 | Seq. ID No. 3228 | Cyto | 1 |
| 1565 | Seq. ID No. 3229 | Seq. ID No. 3230 | Cyto | |
| 1567 | Seq. ID No. 3231 | Seq. ID No. 3232 | Cyto | |
| 1568b | Seq. ID No. 3233 | Seq. ID No. 3234 | IM | 1 |
| 1569 | Seq. ID No. 3235 | Seq. ID No. 3236 | IM | 2 |
| 1570 | Seq. ID No. 3237 | Seq. ID No. 3238 | Peri | 2 |
| 1571 | Seq. ID No. 3239 | Seq. ID No. 3240 | IM | 5 |
| 1572d | Seq. ID No. 3247 | Seq. ID No. 3248 | IM | 11 |
| 1573 | Seq. ID No. 3251 | Seq. ID No. 3252 | Cyto | |
| 1576 | Seq. ID No. 3253 | Seq. ID No. 3254 | Cyto | |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|------------|-------------------|-----------------------|-------|-----|
| 1578 | Seq. ID No. 3259 | Seq. ID No. 3260 | IM | 2 |
| 1581 | Seq. ID No. 3265 | Seq. ID No. 3266 | IM | 1 |
| 1582a | Seq. ID No. 3267 | Seq. ID No. 3268 | IM | |
| 1582c | Seq. ID No. 3271 | Seq. ID No. 3272 | IM | 1 |
| 1584 | Seq. ID No. 3273 | Seq. ID No. 3274 | Peri | 1 |
| 1587a | Seq. ID No. 3279 | Seq. ID No. 3280 | Cyto | |
| 1587b | Seq. ID No. 3281 | Seq. ID No. 3282 | Cyto | |
| 1587c | Seq. ID No. 3283 | Seq. ID No. 3284 | Cyto | |
| 1588 | Seq. ID No. 3285 | Seq. ID No. 3286 | IM | 0 |
| 1590 | Seq. ID No. 3287 | Seq. ID No. 3288 | Cyto | |
| 1591 | Seq. ID No. 3289 | Seq. ID No. 3290 | Cyto | |
| 1592a | Seq. ID No. 3291 | Seq. ID No. 3292 | Cyto | |
| 1592b | Seq. ID No. 3293 | Seq. ID No. 3294 | Cyto | |
| 1593 | Seq. ID No. 3295 | Seq. ID No. 3296 | Cyto | |
| 1594b | Seq. ID No. 3299 | Seq. ID No. 3300 | IM | 1 |
| 1595a | Seq. ID No. 3301 | Seq. ID No. 3302 | Cyto | 0 |
| 1595b | Seq. ID No. 3303 | Seq. ID No. 3304 | Cyto | 0 |
| 1598a | Seq. ID No. 3305 | Seq. ID No. 3306 | Cyto | 0 |
| 1598b | Seq. ID No. 3307 | Seq. ID No. 3308 | Cyto | 0 |
| 1600a | Seq. ID No. 3309 | Seq. ID No. 3310 | Cyto | 1 |
| 1600b | Seq. ID No. 3311 | Seq. ID No. 3312 | Cyto | 1 |
| 1600c | Seq. ID No. 3313 | Seq. ID No. 3314 | Cyto | 1 |
| 1602 | Seq. ID No. 3315 | Seq. ID No. 3316 | Cyto | |
| 1606b | Seq. ID No. 3319 | Seq. ID No. 3320 | IM | 2 |
| 1607a | Seq. ID No. 3321 | Seq. ID No. 3322 | IM | 5 |
| 1610a | Seq. ID No. 3327 | Seq. ID No. 3328 | Cyto | |
| 1610b | Seq. ID No. 3329 | Seq. ID No. 3330 | Cyto | |
| 1616a | Seq. ID No. 3333 | Seq. ID No. 3334 | IM | 1 |
| 1622a | Seq. ID No. 3341 | Seq. ID No. 3342 | Cyto | 0 |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|------------|-------------------|-----------------------|-------|-----|
| 1623a | Seq. ID No. 3343 | Seq. ID No. 3344 | Cyto | |
| 1623b | Seq. ID No. 3345 | Seq. ID No. 3346 | Cyto | |
| 1623c | Seq. ID No. 3347 | Seq. ID No. 3348 | Cyto | |
| 1628a | Seq. ID No. 3361 | Seq. ID No. 3362 | Cyto | |
| 1628b | Seq. ID No. 3363 | Seq. ID No. 3364 | Cyto | |
| 1632a | Seq. ID No. 3365 | Seq. ID No. 3366 | Cyto | 0 |
| 1632b | Seq. ID No. 3367 | Seq. ID No. 3368 | Cyto | 0 |
| 1633a | Seq. ID No. 3369 | Seq. ID No. 3370 | IM | 2 |
| 1633b | Seq. ID No. 3371 | Seq. ID No. 3372 | IM | 2 |
| 1634a | Seq. ID No. 3373 | Seq. ID No. 3374 | Cyto | |
| 1639b | Seq. ID No. 3379 | Seq. ID No. 3380 | Cyto | |
| 1642a | Seq. ID No. 3381 | Seq. ID No. 3382 | Cyto | 1 |
| 1642b | Seq. ID No. 3383 | Seq. ID No. 3384 | Cyto | 1 |
| 1643a | Seq. ID No. 3385 | Seq. ID No. 3386 | Cyto | |
| 1643b | Seq. ID No. 3387 | Seq. ID No. 3388 | Cyto | |
| 1646c | Seq. ID No. 3393 | Seq. ID No. 3394 | IM | 11 |
| 1646e | Seq. ID No. 3397 | Seq. ID No. 3398 | IM | 13 |
| 1646f | Seq. ID No. 3399 | Seq. ID No. 3400 | IM | 13 |
| 1647 | Seq. ID No. 3401 | Seq. ID No. 3402 | Cyto | |
| 1648b | Seq. ID No. 3403 | Seq. ID No. 3404 | IM | 3 |
| 1649b | Seq. ID No. 3407 | Seq. ID No. 3408 | Cyto | 2 |
| 1649c | Seq. ID No. 3409 | Seq. ID No. 3410 | Cyto | 2 |
| 1652a | Seq. ID No. 3411 | Seq. ID No. 3412 | Cyto | |
| 1652b | Seq. ID No. 3413 | Seq. ID No. 3414 | Cyto | |
| 1656b | Seq. ID No. 3417 | Seq. ID No. 3418 | Cyto | |
| 1657 | Seq. ID No. 3419 | Seq. ID No. 3420 | Cyto | |
| 1659b | Seq. ID No. 3423 | Seq. ID No. 3424 | IM | 9 |
| 1662a | Seq. ID No. 3429 | Seq. ID No. 3430 | Cyto | 1 |
| 1662b | Seq. ID No. 3431 | Seq. ID No. 3432 | Cyto | 1 |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|------------|-------------------|-----------------------|-------|-----|
| 1664 | Seq. ID No. 3435 | Seq. ID No. 3436 | IM | 0 |
| 1665a | Seq. ID No. 3437 | Seq. ID No. 3438 | Cyto | 1 |
| 1668 | Seq. ID No. 3439 | Seq. ID No. 3440 | IM | 1 |
| 1670a | Seq. ID No. 3443 | Seq. ID No. 3444 | Cyto | |
| 1670b | Seq. ID No. 3445 | Seq. ID No. 3446 | Cyto | |
| 1670c | Seq. ID No. 3447 | Seq. ID No. 3448 | IM | |
| 1673f | Seq. ID No. 3459 | Seq. ID No. 3460 | IM | 14 |
| 1674 | Seq. ID No. 3461 | Seq. ID No. 3462 | OM | 1 |
| 1675b | Seq. ID No. 3465 | Seq. ID No. 3466 | Cyto | 1 |
| 1675c | Seq. ID No. 3467 | Seq. ID No. 3468 | Cyto | 1 |
| 1676 | Seq. ID No. 3469 | Seq. ID No. 3470 | Cyto | 1 |
| 1677 | Seq. ID No. 3471 | Seq. ID No. 3472 | Cyto | 0 |
| 1679 | Seq. ID No. 3473 | Seq. ID No. 3474 | IM | 1 |
| 1680 | Seq. ID No. 3475 | Seq. ID No. 3476 | IM | |
| 1682a | Seq. ID No. 3477 | Seq. ID No. 3478 | Cyto | |
| 1682b | Seq. ID No. 3479 | Seq. ID No. 3480 | Cyto | |
| 1683b | Seq. ID No. 3483 | Seq. ID No. 3484 | IM | 6 |
| 1684 | Seq. ID No. 3485 | Seq. ID No. 3486 | Cyto | |
| 1685 | Seq. ID No. 3487 | Seq. ID No. 3488 | Cyto | 0 |
| 1687 | Seq. ID No. 3489 | Seq. ID No. 3490 | Cyto | 0 |
| 1688c | Seq. ID No. 3495 | Seq. ID No. 3496 | IM | 11 |
| 1689a | Seq. ID No. 3497 | Seq. ID No. 3498 | IM | |
| 1689b | Seq. ID No. 3499 | Seq. ID No. 3500 | IM | |
| 1689c | Seq. ID No. 3501 | Seq. ID No. 3502 | Cyto | |
| 1691 | Seq. ID No. 3507 | Seq. ID No. 3508 | IM | 9 |
| 1692 | Seq. ID No. 3509 | Seq. ID No. 3510 | Cyto | |
| 1693 | Seq. ID No. 3511 | Seq. ID No. 3512 | IM | |
| 1694a | Seq. ID No. 3513 | Seq. ID No. 3514 | Cyto | |
| 1694b | Seq. ID No. 3515 | Seq. ID No. 3516 | Cyto | |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|---------------|-------------------|-----------------------|-------|-----|
| 1696 | Seq. ID No. 3521 | Seq. ID No. 3522 | Peri | 1 |
| 1697a | Seq. ID No. 3523 | Seq. ID No. 3524 | IM | 7 |
| 1697b | Seq. ID No. 3525 | Seq. ID No. 3526 | IM | 9 |
| 1699b | Seq. ID No. 3529 | Seq. ID No. 3530 | IM | 10 |
| 1700b | Seq. ID No. 3533 | Seq. ID No. 3534 | IM | 4 |
| 1701a | Seq. ID No. 3535 | Seq. ID No. 3536 | Cyto | 0 |
| 1701b | Seq. ID No. 3537 | Seq. ID No. 3538 | Cyto | 0 |
| 1704a | Seq. ID No. 3541 | Seq. ID No. 3542 | IM | 0 |
| 1704b | Seq. ID No. 3543 | Seq. ID No. 3544 | Cyto | 0 |
| 1705a | Seq. ID No. 3545 | Seq. ID No. 3546 | Cyto | |
| 1705b | Seq. ID No. 3547 | Seq. ID No. 3548 | Cyto | |
| 1706 | Seq. ID No. 3549 | Seq. ID No. 3550 | Cyto | |
| 1707a | Seq. ID No. 3551 | Seq. ID No. 3552 | Cyto | |
| 1707b | Seq. ID No. 3553 | Seq. ID No. 3554 | Cyto | |
| 1708 | Seq. ID No. 3555 | Seq. ID No. 3556 | Cyto | 0 |
| 1709 | Seq. ID No. 3557 | Seq. ID No. 3558 | Cyto | |
| 1710a | Seq. ID No. 3559 | Seq. ID No. 3560 | Peri | |
| 1712a | Seq. ID No. 3563 | Seq. ID No. 3564 | Cyto | |
| 1712b | Seq. ID No. 3565 | Seq. ID No. 3566 | Cyto | |
| 1715a | Seq. ID No. 3567 | Seq. ID No. 3568 | Cyto | |
| 1715b | Seq. ID No. 3569 | Seq. ID No. 3570 | Cyto | |
| 1718a | Seq. ID No. 3571 | Seq. ID No. 3572 | Cyto | |
| 1722 | Seq. ID No. 3575 | Seq. ID No. 3576 | IM | 1 |
| 1723a | Seq. ID No. 3577 | Seq. ID No. 3578 | Cyto | 0 |
| 1723b | Seq. ID No. 3579 | Seq. ID No. 3580 | Cyto | 0 |
| 1727 | Seq. ID No. 3583 | Seq. ID No. 3584 | Cyto | 0 |
| 1728 | Seq. ID No. 3585 | Seq. ID No. 3586 | Cyto | |
| 1733 | Seq. ID No. 3589 | Seq. ID No. 3590 | Cyto | |
| 1734 | Seq. ID No. 3591 | Seq. ID No. 3592 | Cyto | |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|------------|-------------------|-----------------------|-------|-----|
| 1737a | Seq. ID No. 3597 | Seq. ID No. 3598 | Cyto | |
| 1737b | Seq. ID No. 3599 | Seq. ID No. 3600 | Cyto | |
| 1738a | Seq. ID No. 3601 | Seq. ID No. 3602 | Cyto | |
| 1738b | Seq. ID No. 3603 | Seq. ID No. 3604 | Cyto | 0 |
| 1738c | Seq. ID No. 3605 | Seq. ID No. 3606 | Cyto | 0 |
| 1739 | Seq. ID No. 3607 | Seq. ID No. 3608 | Cyto | |
| 1741 | Seq. ID No. 3609 | Seq. ID No. 3610 | Cyto | |
| 1744a | Seq. ID No. 3613 | Seq. ID No. 3614 | Cyto | |
| 1744b | Seq. ID No. 3615 | Seq. ID No. 3616 | Cyto | |
| 1749b | Seq. ID No. 3623 | Seq. ID No. 3624 | IM | 4 |
| 1752a | Seq. ID No. 3627 | Seq. ID No. 3628 | Cyto | |
| 1753 | Seq. ID No. 3631 | Seq. ID No. 3632 | Cyto | |
| 1756a | Seq. ID No. 3633 | Seq. ID No. 3634 | Cyto | |
| 1757a | Seq. ID No. 3637 | Seq. ID No. 3638 | IM | 2 |
| 1757b | Seq. ID No. 3639 | Seq. ID No. 3640 | IM | 2 |
| 1759 | Seq. ID No. 3641 | Seq. ID No. 3642 | Cyto | |
| 1760 | Seq. ID No. 3643 | Seq. ID No. 3644 | Cyto | |
| 1762 | Seq. ID No. 3645 | Seq. ID No. 3646 | Cyto | |
| 1764a | Seq. ID No. 3647 | Seq. ID No. 3648 | IM | |
| 1764b | Seq. ID No. 3649 | Seq. ID No. 3650 | IM | |
| 1764c | Seq. ID No. 3651 | Seq. ID No. 3652 | IM | |
| 1765 | Seq. ID No. 3653 | Seq. ID No. 3654 | Cyto | |
| 1766 | Seq. ID No. 3655 | Seq. ID No. 3656 | IM | 0 |
| 1767a | Seq. ID No. 3657 | Seq. ID No. 3658 | Cyto | |
| 1767b | Seq. ID No. 3659 | Seq. ID No. 3660 | Cyto | |
| 1769a | Seq. ID No. 3661 | Seq. ID No. 3662 | IM | 5 |
| 1769b | Seq. ID No. 3663 | Seq. ID No. 3664 | IM | 7 |
| 1771 | Seq. ID No. 3665 | Seq. ID No. 3666 | Cyto | |
| 1773 | Seq. ID No. 3667 | Seq. ID No. 3668 | Cyto | |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|------------|-------------------|-----------------------|-------|-----|
| 1774 | Seq. ID No. 3669 | Seq. ID No. 3670 | IM | |
| 1775a | Seq. ID No. 3671 | Seq. ID No. 3672 | Cyto | |
| 1775b | Seq. ID No. 3673 | Seq. ID No. 3674 | Cyto | |
| 1775c | Seq. ID No. 3675 | Seq. ID No. 3676 | Cyto | |
| 1780 | Seq. ID No. 3681 | Seq. ID No. 3682 | IM | 0 |
| 1783a | Seq. ID No. 3683 | Seq. ID No. 3684 | IM | 1 |
| 1783b | Seq. ID No. 3685 | Seq. ID No. 3686 | IM | 1 |
| 1784a | Seq. ID No. 3687 | Seq. ID No. 3688 | IM | |
| 1788a | Seq. ID No. 3691 | Seq. ID No. 3692 | Cyto | |
| 1788b | Seq. ID No. 3693 | Seq. ID No. 3694 | IM | |
| 1788c | Seq. ID No. 3695 | Seq. ID No. 3696 | Cyto | |
| 1789a | Seq. ID No. 3697 | Seq. ID No. 3698 | Cyto | |
| 1789b | Seq. ID No. 3699 | Seq. ID No. 3700 | Cyto | |
| 1790a | Seq. ID No. 3701 | Seq. ID No. 3702 | Cyto | 2 |
| 1790b | Seq. ID No. 3703 | Seq. ID No. 3704 | Cyto | 3 |
| 1792a | Seq. ID No. 3705 | Seq. ID No. 3706 | Peri | 0 |
| 1792b | Seq. ID No. 3707 | Seq. ID No. 3708 | Cyto | 0 |
| 1792c | Seq. ID No. 3709 | Seq. ID No. 3710 | Cyto | 0 |
| 1793a | Seq. ID No. 3711 | Seq. ID No. 3712 | IM | |
| 1793b | Seq. ID No. 3713 | Seq. ID No. 3714 | IM | |
| 1793c | Seq. ID No. 3715 | Seq. ID No. 3716 | IM | |
| 1797a | Seq. ID No. 3719 | Seq. ID No. 3720 | Cyto | |
| 1797b | Seq. ID No. 3721 | Seq. ID No. 3722 | Cyto | |
| 1798b | Seq. ID No. 3725 | Seq. ID No. 3726 | IM | 4 |
| 1800 | Seq. ID No. 3729 | Seq. ID No. 3730 | IM | 1 |
| 1802a | Seq. ID No. 3731 | Seq. ID No. 3732 | IM | 2 |
| 1802b | Seq. ID No. 3733 | Seq. ID No. 3734 | IM | 2 |
| 1803 | Seq. ID No. 3735 | Seq. ID No. 3736 | IM | 3 |
| 1804a | Seq. ID No. 3737 | Seq. ID No. 3738 | IM | 2 |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|------------|-------------------|-----------------------|-------|-----|
| 1804b | Seq. ID No. 3739 | Seq. ID No. 3740 | IM | 2 |
| 1806a | Seq. ID No. 3743 | Seq. ID No. 3744 | IM | 5 |
| 1806c | Seq. ID No. 3747 | Seq. ID No. 3748 | IM | 5 |
| 1807a | Seq. ID No. 3749 | Seq. ID No. 3750 | IM | 2 |
| 1807b | Seq. ID No. 3751 | Seq. ID No. 3752 | IM | 2 |
| 1808d | Seq. ID No. 3759 | Seq. ID No. 3760 | IM | 15 |
| 1809d | Seq. ID No. 3767 | Seq. ID No. 3768 | IM | 12 |
| 1809e | Seq. ID No. 3769 | Seq. ID No. 3770 | IM | 14 |
| 1809f | Seq. ID No. 3771 | Seq. ID No. 3772 | IM | 14 |
| 1810a | Seq. ID No. 3773 | Seq. ID No. 3774 | Cyto | |
| 1810b | Seq. ID No. 3775 | Seq. ID No. 3776 | Cyto | |
| 1811a | Seq. ID No. 3777 | Seq. ID No. 3778 | Cyto | |
| 1811b | Seq. ID No. 3779 | Seq. ID No. 3780 | Cyto | |
| 1813 | Seq. ID No. 3785 | Seq. ID No. 3786 | IM | 1 |
| 1815a | Seq. ID No. 3787 | Seq. ID No. 3788 | Cyto | |
| 1815b | Seq. ID No. 3789 | Seq. ID No. 3790 | Cyto | |
| 1815c | Seq. ID No. 3791 | Seq. ID No. 3792 | Cyto | |
| 1816b | Seq. ID No. 3795 | Seq. ID No. 3796 | IM | 1 |
| 1816c | Seq. ID No. 3797 | Seq. ID No. 3798 | IM | 1 |
| 1819a | Seq. ID No. 3801 | Seq. ID No. 3802 | IM | 0 |
| 1819b | Seq. ID No. 3803 | Seq. ID No. 3804 | IM | 0 |
| 1821 | Seq. ID No. 3805 | Seq. ID No. 3806 | Cyto | 0 |
| 1823a | Seq. ID No. 3809 | Seq. ID No. 3810 | Cyto | |
| 1823b | Seq. ID No. 3811 | Seq. ID No. 3812 | Cyto | |
| 1828 | Seq. ID No. 3819 | Seq. ID No. 3820 | Cyto | |
| 1830a | Seq. ID No. 3821 | Seq. ID No. 3822 | IM | 6 |
| 1830b | Seq. ID No. 3823 | Seq. ID No. 3824 | IM | 7 |
| 1833 | Seq. ID No. 3825 | Seq. ID No. 3826 | Cyto | |
| 1834 | Seq. ID No. 3827 | Seq. ID No. 3828 | Cyto | |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|------------|-------------------|-----------------------|-------|-----|
| 1835 | Seq. ID No. 3829 | Seq. ID No. 3830 | Cyto | |
| 1836a | Seq. ID No. 3831 | Seq. ID No. 3832 | IM | 1 |
| 1836b | Seq. ID No. 3833 | Seq. ID No. 3834 | IM | 1 |
| 1837 | Seq. ID No. 3835 | Seq. ID No. 3836 | IM | |
| 1838c | Seq. ID No. 3841 | Seq. ID No. 3842 | IM | 6 |
| 1838d | Seq. ID No. 3843 | Seq. ID No. 3844 | IM | 6 |
| 1839a | Seq. ID No. 3845 | Seq. ID No. 3846 | Cyto | 0 |
| 1839b | Seq. ID No. 3847 | Seq. ID No. 3848 | Cyto | 0 |
| 1842d | Seq. ID No. 3855 | Seq. ID No. 3856 | IM | 10 |
| 1843 | Seq. ID No. 3857 | Seq. ID No. 3858 | Cyto | |
| 1848b | Seq. ID No. 3867 | Seq. ID No. 3868 | IM | 10 |
| 1850a | Seq. ID No. 3869 | Seq. ID No. 3870 | IM | 1 |
| 1850b | Seq. ID No. 3871 | Seq. ID No. 3872 | IM | 1 |
| 1850c | Seq. ID No. 3873 | Seq. ID No. 3874 | IM | 1 |
| 1853a | Seq. ID No. 3875 | Seq. ID No. 3876 | IM | 0 |
| 1853b | Seq. ID No. 3877 | Seq. ID No. 3878 | IM | 0 |
| 1854b | Seq. ID No. 3881 | Seq. ID No. 3882 | IM | 4 |
| 1855 | Seq. ID No. 3883 | Seq. ID No. 3884 | IM | 1 |
| 1856 | Seq. ID No. 3885 | Seq. ID No. 3886 | Cyto | |
| 1857a | Seq. ID No. 3887 | Seq. ID No. 3888 | Cyto | 0 |
| 1857d | Seq. ID No. 3893 | Seq. ID No. 3894 | IM | 8 |
| 1859 | Seq. ID No. 3897 | Seq. ID No. 3898 | Cyto | |
| 1861a | Seq. ID No. 3899 | Seq. ID No. 3900 | Cyto | |
| 1861b | Seq. ID No. 3901 | Seq. ID No. 3902 | Cyto | |
| 1863a | Seq. ID No. 3905 | Seq. ID No. 3906 | Cyto | |
| 1863b | Seq. ID No. 3907 | Seq. ID No. 3908 | Cyto | 0 |
| 1864a | Seq. ID No. 3909 | Seq. ID No. 3910 | Cyto | 0 |
| 1865a | Seq. ID No. 3911 | Seq. ID No. 3912 | IM | 6 |
| 1865b | Seq. ID No. 3913 | Seq. ID No. 3914 | IM | 7 |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|-----------------------|--------------------------|------------------------------|--------------|------------|
| 1869 | Seq. ID No. 3917 | Seq. ID No. 3918 | Cyto | |
| 1870 | Seq. ID No. 3919 | Seq. ID No. 3920 | Cyto | 0 |
| 1873a | Seq. ID No. 3921 | Seq. ID No. 3922 | Cyto | |
| 1875b | Seq. ID No. 3927 | Seq. ID No. 3928 | Cyto | |
| 1875c | Seq. ID No. 3929 | Seq. ID No. 3930 | IM | 1 |
| 1877a | Seq. ID No. 3931 | Seq. ID No. 3932 | Cyto | |
| 1877b | Seq. ID No. 3933 | Seq. ID No. 3934 | Cyto | |
| 1878 | Seq. ID No. 3935 | Seq. ID No. 3936 | IM | |
| 1879 | Seq. ID No. 3937 | Seq. ID No. 3938 | Cyto | 1 |
| 1882 | Seq. ID No. 3939 | Seq. ID No. 3940 | IM | 2 |
| 1884 | Seq. ID No. 3941 | Seq. ID No. 3942 | Cyto | |
| 1886 | Seq. ID No. 3943 | Seq. ID No. 3944 | Cyto | |
| 1887 | Seq. ID No. 3945 | Seq. ID No. 3946 | Cyto | 0 |
| 1888a | Seq. ID No. 3947 | Seq. ID No. 3948 | IM | 10 |
| 1888b | Seq. ID No. 3949 | Seq. ID No. 3950 | IM | 10 |
| 1890 | Seq. ID No. 3951 | Seq. ID No. 3952 | Cyto | |
| 1891a | Seq. ID No. 3953 | Seq. ID No. 3954 | Cyto | |
| 1891b | Seq. ID No. 3955 | Seq. ID No. 3956 | Cyto | |
| 1893 | Seq. ID No. 3957 | Seq. ID No. 3958 | Cyto | 0 |
| 1895 | Seq. ID No. 3961 | Seq. ID No. 3962 | IM | 0 |
| 1896b | Seq. ID No. 3965 | Seq. ID No. 3966 | IM | 2 |
| 1897a | Seq. ID No. 3967 | Seq. ID No. 3968 | Cyto | |
| 1897b | Seq. ID No. 3969 | Seq. ID No. 3970 | Cyto | |
| 1897c | Seq. ID No. 3971 | Seq. ID No. 3972 | Cyto | |
| 1899 | Seq. ID No. 3977 | Seq. ID No. 3978 | Cyto | |
| 1900 | Seq. ID No. 3979 | Seq. ID No. 3980 | Cyto | 1 |
| 1902a | Seq. ID No. 3981 | Seq. ID No. 3982 | Cyto | 0 |
| 1902b | Seq. ID No. 3983 | Seq. ID No. 3984 | Cyto | 0 |
| 1907 | Seq. ID No. 3985 | Seq. ID No. 3986 | Cyto | |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|------------|-------------------|-----------------------|-------|-----|
| 1912 | Seq. ID No. 3987 | Seq. ID No. 3988 | Cyto | 0 |
| 1915a | Seq. ID No. 3989 | Seq. ID No. 3990 | Cyto | |
| 1915b | Seq. ID No. 3991 | Seq. ID No. 3992 | Cyto | |
| 1918b | Seq. ID No. 3999 | Seq. ID No. 4000 | IM | 0 |
| 1918c | Seq. ID No. 4001 | Seq. ID No. 4002 | IM | 0 |
| 1918d | Seq. ID No. 4003 | Seq. ID No. 4004 | IM | 0 |
| 1923a | Seq. ID No. 4011 | Seq. ID No. 4012 | Cyto | 0 |
| 1923b | Seq. ID No. 4013 | Seq. ID No. 4014 | Cyto | 0 |
| 1925 | Seq. ID No. 4015 | Seq. ID No. 4016 | Cyto | |
| 1926 | Seq. ID No. 4017 | Seq. ID No. 4018 | Cyto | 1 |
| 1927a | Seq. ID No. 4019 | Seq. ID No. 4020 | Cyto | |
| 1927b | Seq. ID No. 4021 | Seq. ID No. 4022 | Cyto | 0 |
| 1930 | Seq. ID No. 4023 | Seq. ID No. 4024 | Cyto | |
| 1931c | Seq. ID No. 4029 | Seq. ID No. 4030 | IM | 7 |
| 1932 | Seq. ID No. 4031 | Seq. ID No. 4032 | IM | 3 |
| 1933a | Seq. ID No. 4033 | Seq. ID No. 4034 | Cyto | 1 |
| 1933b | Seq. ID No. 4035 | Seq. ID No. 4036 | Cyto | 1 |
| 1934 | Seq. ID No. 4037 | Seq. ID No. 4038 | Cyto | |
| 1939a | Seq. ID No. 4051 | Seq. ID No. 4052 | Cyto | 0 |
| 1939b | Seq. ID No. 4053 | Seq. ID No. 4054 | Cyto | 0 |
| 1939c | Seq. ID No. 4055 | Seq. ID No. 4056 | IM | 0 |
| 1940 | Seq. ID No. 4057 | Seq. ID No. 4058 | Cyto | |
| 1941a | Seq. ID No. 4059 | Seq. ID No. 4060 | IM | 2 |
| 1942 | Seq. ID No. 4063 | Seq. ID No. 4064 | Cyto | |
| 1943a | Seq. ID No. 4065 | Seq. ID No. 4066 | Cyto | 0 |
| 1943b | Seq. ID No. 4067 | Seq. ID No. 4068 | Cyto | 0 |
| 1944 | Seq. ID No. 4069 | Seq. ID No. 4070 | IM | 1 |
| 1946c | Seq. ID No. 4075 | Seq. ID No. 4076 | IM | 10 |
| 1949 | Seq. ID No. 4077 | Seq. ID No. 4078 | Cyto | |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|---------------|-------------------|-----------------------|-------|-----|
| 1951c | Seq. ID No. 4085 | Seq. ID No. 4086 | IM | 4 |
| 1951d | Seq. ID No. 4087 | Seq. ID No. 4088 | IM | 4 |
| 1953 | Seq. ID No. 4089 | Seq. ID No. 4090 | IM | 1 |
| 1954a | Seq. ID No. 4091 | Seq. ID No. 4092 | IM | 0 |
| 1954b | Seq. ID No. 4093 | Seq. ID No. 4094 | IM | 0 |
| 1954c | Seq. ID No. 4095 | Seq. ID No. 4096 | IM | 0 |
| 1956 | Seq. ID No. 4097 | Seq. ID No. 4098 | Cyto | |
| 1957 | Seq. ID No. 4099 | Seq. ID No. 4100 | Cyto | |
| 1958c | Seq. ID No. 4105 | Seq. ID No. 4106 | IM | 9 |
| 1960a | Seq. ID No. 4107 | Seq. ID No. 4108 | Cyto | 0 |
| 1960b | Seq. ID No. 4109 | Seq. ID No. 4110 | Cyto | 0 |
| 1961 | Seq. ID No. 4113 | Seq. ID No. 4114 | IM | 1 |
| 1962a | Seq. ID No. 4115 | Seq. ID No. 4116 | Cyto | |
| 1962b | Seq. ID No. 4117 | Seq. ID No. 4118 | Cyto | |
| 1965a | Seq. ID No. 4119 | Seq. ID No. 4120 | Cyto | 0 |
| 1965b | Seq. ID No. 4121 | Seq. ID No. 4122 | Cyto | 0 |
| 1966 | Seq. ID No. 4123 | Seq. ID No. 4124 | Cyto | |
| 1967 | Seq. ID No. 4125 | Seq. ID No. 4126 | Cyto | |
| 1968 | Seq. ID No. 4127 | Seq. ID No. 4128 | Cyto | |
| 1969 | Seq. ID No. 4129 | Seq. ID No. 4130 | IM | 3 |
| 1970a | Seq. ID No. 4131 | Seq. ID No. 4132 | Cyto | |
| 1979a | Seq. ID No. 4147 | Seq. ID No. 4148 | Cyto | |
| 1979b | Seq. ID No. 4149 | Seq. ID No. 4150 | Cyto | |
| 1981 | Seq. ID No. 4155 | Seq. ID No. 4156 | Cyto | 1 |
| 1982 | Seq. ID No. 4157 | Seq. ID No. 4158 | IM | |
| 1985a | Seq. ID No. 4159 | Seq. ID No. 4160 | Cyto | |
| 1985b | Seq. ID No. 4161 | Seq. ID No. 4162 | Cyto | |
| 1986 | Seq. ID No. 4163 | Seq. ID No. 4164 | Cyto | |
| 1987a | Seq. ID No. 4165 | Seq. ID No. 4166 | Cyto | |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|---------------|-------------------|-----------------------|-------|-----|
| 1987b | Seq. ID No. 4167 | Seq. ID No. 4168 | Cyto | |
| 1989a | Seq. ID No. 4169 | Seq. ID No. 4170 | Cyto | |
| 1989b | Seq. ID No. 4171 | Seq. ID No. 4172 | Cyto | |
| 1989c | Seq. ID No. 4173 | Seq. ID No. 4174 | Cyto | |
| 1990a | Seq. ID No. 4175 | Seq. ID No. 4176 | Cyto | |
| 1990b | Seq. ID No. 4177 | Seq. ID No. 4178 | Cyto | |
| 1990c | Seq. ID No. 4179 | Seq. ID No. 4180 | Cyto | |
| 1992a | Seq. ID No. 4183 | Seq. ID No. 4184 | Cyto | |
| 1992b | Seq. ID No. 4185 | Seq. ID No. 4186 | Cyto | |
| 1993a | Seq. ID No. 4187 | Seq. ID No. 4188 | Cyto | |
| 1993b | Seq. ID No. 4189 | Seq. ID No. 4190 | Cyto | |
| 1993c | Seq. ID No. 4191 | Seq. ID No. 4192 | Cyto | |
| 1996 | Seq. ID No. 4193 | Seq. ID No. 4194 | Cyto | 0 |
| 2000 | Seq. ID No. 4195 | Seq. ID No. 4196 | IM | |
| 2001 | Seq. ID No. 4197 | Seq. ID No. 4198 | IM | 0 |
| 2003 | Seq. ID No. 4199 | Seq. ID No. 4200 | Cyto | |
| 2006 | Seq. ID No. 4201 | Seq. ID No. 4202 | Cyto | |
| 2008 | Seq. ID No. 4203 | Seq. ID No. 4204 | IM | 2 |
| 2010 | Seq. ID No. 4205 | Seq. ID No. 4206 | Cyto | |
| 2011a | Seq. ID No. 4207 | Seq. ID No. 4208 | Cyto | 1 |
| 2011b | Seq. ID No. 4209 | Seq. ID No. 4210 | Cyto | 1 |
| 2011c | Seq. ID No. 4211 | Seq. ID No. 4212 | Cyto | 1 |
| 2013a | Seq. ID No. 4213 | Seq. ID No. 4214 | Cyto | |
| 2013b | Seq. ID No. 4215 | Seq. ID No. 4216 | Cyto | |
| 2014c | Seq. ID No. 4217 | Seq. ID No. 4218 | Cyto | |
| 2015 | Seq. ID No. 4219 | Seq. ID No. 4220 | Cyto | |
| 2016e | Seq. ID No. 4229 | Seq. ID No. 4230 | IM | 12 |
| 2016h | Seq. ID No. 4235 | Seq. ID No. 4236 | IM | 13 |
| 2020 | Seq. ID No. 4237 | Seq. ID No. 4238 | IM | 1 |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|------------|-------------------|-----------------------|-------|-----|
| 2021 | Seq. ID No. 4239 | Seq. ID No. 4240 | IM | 2 |
| 2023b | Seq. ID No. 4243 | Seq. ID No. 4244 | IM | 7 |
| 2024a | Seq. ID No. 4245 | Seq. ID No. 4246 | Cyto | 1 |
| 2024c | Seq. ID No. 4249 | Seq. ID No. 4250 | IM | 2 |
| 2024d | Seq. ID No. 4251 | Seq. ID No. 4252 | IM | 2 |
| 2027 | Seq. ID No. 4255 | Seq. ID No. 4256 | Cyto | 0 |
| 2033 | Seq. ID No. 4267 | Seq. ID No. 4268 | Cyto | |
| 2036 | Seq. ID No. 4271 | Seq. ID No. 4272 | Cyto | |
| 2037 | Seq. ID No. 4273 | Seq. ID No. 4274 | Cyto | |
| 2040a | Seq. ID No. 4277 | Seq. ID No. 4278 | IM | 3 |
| 2042 | Seq. ID No. 4279 | Seq. ID No. 4280 | IM | 2 |
| 2043b | Seq. ID No. 4281 | Seq. ID No. 4282 | Cyto | |
| 2044 | Seq. ID No. 4283 | Seq. ID No. 4284 | Cyto | 0 |
| 2046a | Seq. ID No. 4289 | Seq. ID No. 4290 | Cyto | |
| 2046b | Seq. ID No. 4291 | Seq. ID No. 4292 | Cyto | |
| 2047a | Seq. ID No. 4293 | Seq. ID No. 4294 | IM | 0 |
| 2047b | Seq. ID No. 4295 | Seq. ID No. 4296 | IM | 0 |
| 2050 | Seq. ID No. 4299 | Seq. ID No. 4300 | Cyto | |
| 2053 | Seq. ID No. 4301 | Seq. ID No. 4302 | Peri | |
| 2054 | Seq. ID No. 4303 | Seq. ID No. 4304 | Cyto | |
| 2055 | Seq. ID No. 4305 | Seq. ID No. 4306 | Cyto | |
| 2057 | Seq. ID No. 4309 | Seq. ID No. 4310 | IM | 0 |
| 2060a | Seq. ID No. 4315 | Seq. ID No. 4316 | Cyto | |
| 2060b | Seq. ID No. 4317 | Seq. ID No. 4318 | Cyto | |
| 2062a | Seq. ID No. 4319 | Seq. ID No. 4320 | Cyto | 0 |
| 2062b | Seq. ID No. 4321 | Seq. ID No. 4322 | Cyto | 0 |
| 2062c | Seq. ID No. 4323 | Seq. ID No. 4324 | Cyto | 0 |
| 2064 | Seq. ID No. 4325 | Seq. ID No. 4326 | Cyto | |
| 2065a | Seq. ID No. 4327 | Seq. ID No. 4328 | Cyto | |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|------------|-------------------|-----------------------|-------|-----|
| 2065b | Seq. ID No. 4329 | Seq. ID No. 4330 | Cyto | |
| 2066 | Seq. ID No. 4331 | Seq. ID No. 4332 | IM | |
| 2068 | Seq. ID No. 4333 | Seq. ID No. 4334 | Cyto | |
| 2069a | Seq. ID No. 4335 | Seq. ID No. 4336 | Cyto | |
| 2069b | Seq. ID No. 4337 | Seq. ID No. 4338 | Cyto | |
| 2069c | Seq. ID No. 4339 | Seq. ID No. 4340 | Cyto | |
| 2074a | Seq. ID No. 4341 | Seq. ID No. 4342 | Cyto | |
| 2075a | Seq. ID No. 4345 | Seq. ID No. 4346 | Cyto | |
| 2075b | Seq. ID No. 4347 | Seq. ID No. 4348 | Cyto | |
| 2076a | Seq. ID No. 4349 | Seq. ID No. 4350 | Cyto | |
| 2076b | Seq. ID No. 4351 | Seq. ID No. 4352 | IM | |
| 2076c | Seq. ID No. 4353 | Seq. ID No. 4354 | IM | |
| 2078 | Seq. ID No. 4355 | Seq. ID No. 4356 | IM | 1 |
| 2079a | Seq. ID No. 4357 | Seq. ID No. 4358 | IM | 1 |
| 2079b | Seq. ID No. 4359 | Seq. ID No. 4360 | IM | 1 |
| 2079c | Seq. ID No. 4361 | Seq. ID No. 4362 | IM | 1 |
| 2081a | Seq. ID No. 4363 | Seq. ID No. 4364 | Cyto | |
| 2081b | Seq. ID No. 4365 | Seq. ID No. 4366 | Cyto | |
| 2086a | Seq. ID No. 4367 | Seq. ID No. 4368 | Cyto | |
| 2086b | Seq. ID No. 4369 | Seq. ID No. 4370 | Cyto | |
| 2087a | Seq. ID No. 4371 | Seq. ID No. 4372 | Cyto | |
| 2087b | Seq. ID No. 4373 | Seq. ID No. 4374 | Cyto | |
| 2088 | Seq. ID No. 4375 | Seq. ID No. 4376 | IM | 1 |
| 2091 | Seq. ID No. 4377 | Seq. ID No. 4378 | Cyto | |
| 2093a | Seq. ID No. 4381 | Seq. ID No. 4382 | Cyto | |
| 2094 | Seq. ID No. 4383 | Seq. ID No. 4384 | Cyto | |
| 2096b | Seq. ID No. 4387 | Seq. ID No. 4388 | IM | 9 |
| 2097 | Seq. ID No. 4393 | Seq. ID No. 4394 | Cyto | 0 |
| 2098b | Seq. ID No. 4395 | Seq. ID No. 4396 | IM | 1 |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|-----------------------|--------------------------|------------------------------|--------------|------------|
| 2100 | Seq. ID No. 4397 | Seq. ID No. 4398 | Cyto | 1 |
| 2104 | Seq. ID No. 4401 | Seq. ID No. 4402 | IM | 1 |
| 2107a | Seq. ID No. 4405 | Seq. ID No. 4406 | Cyto | 0 |
| 2107b | Seq. ID No. 4407 | Seq. ID No. 4408 | Cyto | 0 |
| 2109a | Seq. ID No. 4409 | Seq. ID No. 4410 | Cyto | |
| 2109b | Seq. ID No. 4411 | Seq. ID No. 4412 | Cyto | |
| 2110a | Seq. ID No. 4413 | Seq. ID No. 4414 | Cyto | 1 |
| 2110b | Seq. ID No. 4415 | Seq. ID No. 4416 | Cyto | 1 |
| 2110c | Seq. ID No. 4417 | Seq. ID No. 4418 | Cyto | 1 |
| 2112a | Seq. ID No. 4419 | Seq. ID No. 4420 | Cyto | 1 |
| 2112b | Seq. ID No. 4421 | Seq. ID No. 4422 | Cyto | 1 |
| 2112c | Seq. ID No. 4423 | Seq. ID No. 4424 | IM | 1 |
| 2114b | Seq. ID No. 4425 | Seq. ID No. 4426 | IM | 1 |
| 2115a | Seq. ID No. 4427 | Seq. ID No. 4428 | Cyto | |
| 2115b | Seq. ID No. 4429 | Seq. ID No. 4430 | Cyto | |
| 2115c | Seq. ID No. 4431 | Seq. ID No. 4432 | IM | |
| 2116 | Seq. ID No. 4433 | Seq. ID No. 4434 | Cyto | |
| 2117 | Seq. ID No. 4435 | Seq. ID No. 4436 | Cyto | 0 |
| 2123 | Seq. ID No. 4443 | Seq. ID No. 4444 | Cyto | |
| 2124a | Seq. ID No. 4445 | Seq. ID No. 4446 | Cyto | |
| 2124b | Seq. ID No. 4447 | Seq. ID No. 4448 | Cyto | |
| 2125a | Seq. ID No. 4449 | Seq. ID No. 4450 | Cyto | |
| 2125b | Seq. ID No. 4451 | Seq. ID No. 4452 | Cyto | |
| 2127a | Seq. ID No. 4453 | Seq. ID No. 4454 | IM | 1 |
| 2127b | Seq. ID No. 4455 | Seq. ID No. 4456 | IM | 1 |
| 2128a | Seq. ID No. 4457 | Seq. ID No. 4458 | Cyto | |
| 2128b | Seq. ID No. 4459 | Seq. ID No. 4460 | Cyto | |
| 2133 | Seq. ID No. 4461 | Seq. ID No. 4462 | Cyto | 0 |
| 2138a | Seq. ID No. 4463 | Seq. ID No. 4464 | Cyto | 0 |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|---------------|-------------------|-----------------------|-------|-----|
| 2138b | Seq. ID No. 4465 | Seq. ID No. 4466 | Cyto | 0 |
| 2138c | Seq. ID No. 4467 | Seq. ID No. 4468 | Cyto | 0 |
| 2140b | Seq. ID No. 4471 | Seq. ID No. 4472 | IM | 5 |
| 2142b | Seq. ID No. 4475 | Seq. ID No. 4476 | IM | 7 |
| 2144a | Seq. ID No. 4477 | Seq. ID No. 4478 | Cyto | |
| 2144b | Seq. ID No. 4479 | Seq. ID No. 4480 | Cyto | |
| 2147c | Seq. ID No. 4487 | Seq. ID No. 4488 | IM | 5 |
| 2149a | Seq. ID No. 4489 | Seq. ID No. 4490 | Cyto | |
| 2149b | Seq. ID No. 4491 | Seq. ID No. 4492 | Cyto | |
| 2152a | Seq. ID No. 4499 | Seq. ID No. 4500 | Cyto | |
| 2153 | Seq. ID No. 4501 | Seq. ID No. 4502 | Cyto | |
| 2155a | Seq. ID No. 4503 | Seq. ID No. 4504 | Cyto | 0 |
| 2155b | Seq. ID No. 4505 | Seq. ID No. 4506 | Cyto | 0 |
| 2156a | Seq. ID No. 4507 | Seq. ID No. 4508 | Cyto | |
| 2156b | Seq. ID No. 4509 | Seq. ID No. 4510 | Cyto | |
| 2156c | Seq. ID No. 4511 | Seq. ID No. 4512 | Cyto | |
| 2160a | Seq. ID No. 4517 | Seq. ID No. 4518 | Cyto | |
| 2160b | Seq. ID No. 4519 | Seq. ID No. 4520 | Cyto | |
| 2160c | Seq. ID No. 4521 | Seq. ID No. 4522 | Cyto | |
| 2160d | Seq. ID No. 4523 | Seq. ID No. 4524 | Cyto | |
| 2161a | Seq. ID No. 4525 | Seq. ID No. 4526 | Cyto | 1 |
| 2164 | Seq. ID No. 4531 | Seq. ID No. 4532 | IM | 0 |
| 2166a | Seq. ID No. 4535 | Seq. ID No. 4536 | Cyto | 1 |
| 2166b | Seq. ID No. 4537 | Seq. ID No. 4538 | Cyto | 2 |
| 2169 | Seq. ID No. 4539 | Seq. ID No. 4540 | Cyto | |
| 2171 | Seq. ID No. 4541 | Seq. ID No. 4542 | Cyto | 0 |
| 2172 | Seq. ID No. 4543 | Seq. ID No. 4544 | Cyto | |
| 2173a | Seq. ID No. 4545 | Seq. ID No. 4546 | Cyto | 0 |
| 2173b | Seq. ID No. 4547 | Seq. ID No. 4548 | Cyto | 0 |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|---------------|-------------------|-----------------------|-------|-----|
| 2174 | Seq. ID No. 4549 | Seq. ID No. 4550 | IM | 0 |
| 2175 | Seq. ID No. 4551 | Seq. ID No. 4552 | IM | 2 |
| 2176a | Seq. ID No. 4553 | Seq. ID No. 4554 | Cyto | 0 |
| 2176b | Seq. ID No. 4555 | Seq. ID No. 4556 | IM | 1 |
| 2176c | Seq. ID No. 4557 | Seq. ID No. 4558 | Cyto | 1 |
| 2176d | Seq. ID No. 4559 | Seq. ID No. 4560 | Cyto | 1 |
| 2177b | Seq. ID No. 4561 | Seq. ID No. 4562 | IM | 1 |
| 2179a | Seq. ID No. 4563 | Seq. ID No. 4564 | Cyto | 0 |
| 2179b | Seq. ID No. 4565 | Seq. ID No. 4566 | Cyto | 0 |
| 2180 | Seq. ID No. 4567 | Seq. ID No. 4568 | Cyto | 0 |
| 2181a | Seq. ID No. 4569 | Seq. ID No. 4570 | Cyto | 0 |
| 2181b | Seq. ID No. 4571 | Seq. ID No. 4572 | Cyto | 0 |
| 2182 | Seq. ID No. 4573 | Seq. ID No. 4574 | IM | 1 |
| 2183 | Seq. ID No. 4575 | Seq. ID No. 4576 | Cyto | |
| 2185 | Seq. ID No. 4577 | Seq. ID No. 4578 | Cyto | |
| 2186a | Seq. ID No. 4579 | Seq. ID No. 4580 | Cyto | |
| 2186b | Seq. ID No. 4581 | Seq. ID No. 4582 | Cyto | |
| 2189a | Seq. ID No. 4583 | Seq. ID No. 4584 | Cyto | |
| 2189b | Seq. ID No. 4585 | Seq. ID No. 4586 | Cyto | |
| 2193 | Seq. ID No. 4591 | Seq. ID No. 4592 | Cyto | |
| 2194a | Seq. ID No. 4593 | Seq. ID No. 4594 | Cyto | |
| 2194c | Seq. ID No. 4595 | Seq. ID No. 4596 | Cyto | |
| 2196 | Seq. ID No. 4597 | Seq. ID No. 4598 | Cyto | |
| 2197a | Seq. ID No. 4599 | Seq. ID No. 4600 | Cyto | |
| 2197b | Seq. ID No. 4601 | Seq. ID No. 4602 | Cyto | |
| 2197c | Seq. ID No. 4603 | Seq. ID No. 4604 | Cyto | |
| 2201a | Seq. ID No. 4605 | Seq. ID No. 4606 | Cyto | 0 |
| 2201b | Seq. ID No. 4607 | Seq. ID No. 4608 | Cyto | 0 |
| 2203 | Seq. ID No. 4609 | Seq. ID No. 4610 | Cyto | |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|------------|-------------------|-----------------------|-------|-----|
| 2204 | Seq. ID No. 4611 | Seq. ID No. 4612 | Cyto | 0 |
| 2206a | Seq. ID No. 4613 | Seq. ID No. 4614 | Cyto | |
| 2206b | Seq. ID No. 4615 | Seq. ID No. 4616 | Cyto | |
| 2208a | Seq. ID No. 4617 | Seq. ID No. 4618 | Cyto | 0 |
| 2208b | Seq. ID No. 4619 | Seq. ID No. 4620 | Cyto | 0 |
| 2208c | Seq. ID No. 4621 | Seq. ID No. 4622 | Cyto | 0 |
| 2209 | Seq. ID No. 4623 | Seq. ID No. 4624 | Cyto | |
| 2212a | Seq. ID No. 4625 | Seq. ID No. 4626 | IM | 1 |
| 2212b | Seq. ID No. 4627 | Seq. ID No. 4628 | IM | 1 |
| 2215a | Seq. ID No. 4629 | Seq. ID No. 4630 | Cyto | 0 |
| 2215b | Seq. ID No. 4631 | Seq. ID No. 4632 | Cyto | 0 |
| 2216a | Seq. ID No. 4633 | Seq. ID No. 4634 | Cyto | |
| 2216b | Seq. ID No. 4635 | Seq. ID No. 4636 | Cyto | |
| 2218 | Seq. ID No. 4637 | Seq. ID No. 4638 | Cyto | 1 |
| 2220a | Seq. ID No. 4645 | Seq. ID No. 4646 | Cyto | |
| 2220b | Seq. ID No. 4647 | Seq. ID No. 4648 | Cyto | |
| 2220c | Seq. ID No. 4649 | Seq. ID No. 4650 | Cyto | |
| 2221 | Seq. ID No. 4651 | Seq. ID No. 4652 | Cyto | |
| 2222 | Seq. ID No. 4653 | Seq. ID No. 4654 | Cyto | 0 |
| 2223a | Seq. ID No. 4655 | Seq. ID No. 4656 | Cyto | |
| 2223b | Seq. ID No. 4657 | Seq. ID No. 4658 | Cyto | |
| 2226 | Seq. ID No. 4661 | Seq. ID No. 4662 | Cyto | 0 |
| 2227 | Seq. ID No. 4663 | Seq. ID No. 4664 | Cyto | |
| 2228a | Seq. ID No. 4665 | Seq. ID No. 4666 | Cyto | |
| 2228b | Seq. ID No. 4667 | Seq. ID No. 4668 | Cyto | |
| 2228c | Seq. ID No. 4669 | Seq. ID No. 4670 | Cyto | |
| 2231 | Seq. ID No. 4671 | Seq. ID No. 4672 | Cyto | |
| 2232 | Seq. ID No. 4673 | Seq. ID No. 4674 | Cyto | |
| 2234a | Seq. ID No. 4675 | Seq. ID No. 4676 | IM | 1 |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|------------|-------------------|-----------------------|-------|-----|
| 2234b | Seq. ID No. 4677 | Seq. ID No. 4678 | IM | 1 |
| 2234c | Seq. ID No. 4679 | Seq. ID No. 4680 | IM | 1 |
| 2236b | Seq. ID No. 4683 | Seq. ID No. 4684 | IM | 4 |
| 2238 | Seq. ID No. 4685 | Seq. ID No. 4686 | Cyto | |
| 2240a | Seq. ID No. 4689 | Seq. ID No. 4690 | Cyto | 0 |
| 2240b | Seq. ID No. 4691 | Seq. ID No. 4692 | Cyto | 1 |
| 2240c | Seq. ID No. 4693 | Seq. ID No. 4694 | Cyto | 1 |
| 2244 | Seq. ID No. 4697 | Seq. ID No. 4698 | Cyto | |
| 2245 | Seq. ID No. 4699 | Seq. ID No. 4700 | OM | 1 |
| 2246 | Seq. ID No. 4701 | Seq. ID No. 4702 | IM | |
| 2248 | Seq. ID No. 4703 | Seq. ID No. 4704 | Cyto | |
| 2253d | Seq. ID No. 4713 | Seq. ID No. 4714 | IM | 7 |
| 2256 | Seq. ID No. 4719 | Seq. ID No. 4720 | Cyto | |
| 2257 | Seq. ID No. 4721 | Seq. ID No. 4722 | IM | 0 |
| 2259a | Seq. ID No. 4723 | Seq. ID No. 4724 | Cyto | |
| 2259b | Seq. ID No. 4725 | Seq. ID No. 4726 | Cyto | |
| 2260b | Seq. ID No. 4727 | Seq. ID No. 4728 | IM | |
| 2260c | Seq. ID No. 4729 | Seq. ID No. 4730 | IM | |
| 2262 | Seq. ID No. 4731 | Seq. ID No. 4732 | Cyto | |
| 2263 | Seq. ID No. 4733 | Seq. ID No. 4734 | Cyto | 1 |
| 2264a | Seq. ID No. 4735 | Seq. ID No. 4736 | Peri | 1 |
| 2267 | Seq. ID No. 4739 | Seq. ID No. 4740 | Cyto | 0 |
| 2268 | Seq. ID No. 4741 | Seq. ID No. 4742 | Cyto | 0 |
| 2269 | Seq. ID No. 4743 | Seq. ID No. 4744 | Cyto | |
| 2270 | Seq. ID No. 4745 | Seq. ID No. 4746 | IM | 1 |
| 2272 | Seq. ID No. 4747 | Seq. ID No. 4748 | Cyto | 1 |
| 2273 | Seq. ID No. 4749 | Seq. ID No. 4750 | Cyto | |
| 2274 | Seq. ID No. 4751 | Seq. ID No. 4752 | Cyto | |
| 2275a | Seq. ID No. 4753 | Seq. ID No. 4754 | IM | 1 |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|------------|-------------------|-----------------------|-------|-----|
| 2275b | Seq. ID No. 4755 | Seq. ID No. 4756 | IM | 1 |
| 2275c | Seq. ID No. 4757 | Seq. ID No. 4758 | IM | 1 |
| 2276b | Seq. ID No. 4761 | Seq. ID No. 4762 | Cyto | 1 |
| 2276c | Seq. ID No. 4763 | Seq. ID No. 4764 | Cyto | 1 |
| 2276d | Seq. ID No. 4765 | Seq. ID No. 4766 | Cyto | 1 |
| 2277a | Seq. ID No. 4767 | Seq. ID No. 4768 | Cyto | 1 |
| 2277b | Seq. ID No. 4769 | Seq. ID No. 4770 | Cyto | 1 |
| 2278a | Seq. ID No. 4771 | Seq. ID No. 4772 | Cyto | |
| 2278b | Seq. ID No. 4773 | Seq. ID No. 4774 | Cyto | |
| 2278c | Seq. ID No. 4775 | Seq. ID No. 4776 | Cyto | 0 |
| 2278d | Seq. ID No. 4777 | Seq. ID No. 4778 | Cyto | 0 |
| 2280 | Seq. ID No. 4779 | Seq. ID No. 4780 | Cyto | |
| 2284 | Seq. ID No. 4781 | Seq. ID No. 4782 | Cyto | 0 |
| 2285 | Seq. ID No. 4783 | Seq. ID No. 4784 | Cyto | |
| 2286a | Seq. ID No. 4785 | Seq. ID No. 4786 | Cyto | |
| 2286b | Seq. ID No. 4787 | Seq. ID No. 4788 | Cyto | |
| 2288 | Seq. ID No. 4789 | Seq. ID No. 4790 | Peri | 1 |
| 2290 | Seq. ID No. 4791 | Seq. ID No. 4792 | Cyto | |
| 2291a | Seq. ID No. 4793 | Seq. ID No. 4794 | Cyto | |
| 2291b | Seq. ID No. 4795 | Seq. ID No. 4796 | Cyto | |
| 2291c | Seq. ID No. 4797 | Seq. ID No. 4798 | Cyto | |
| 2292a | Seq. ID No. 4799 | Seq. ID No. 4800 | Cyto | 0 |
| 2292b | Seq. ID No. 4801 | Seq. ID No. 4802 | Cyto | 0 |
| 2292c | Seq. ID No. 4803 | Seq. ID No. 4804 | Cyto | 0 |
| 2294 | Seq. ID No. 4805 | Seq. ID No. 4806 | Cyto | |
| 2297 | Seq. ID No. 4807 | Seq. ID No. 4808 | Cyto | |
| 2298 | Seq. ID No. 4809 | Seq. ID No. 4810 | Cyto | |
| 2299 | Seq. ID No. 4811 | Seq. ID No. 4812 | Cyto | |
| 2301 | Seq. ID No. 4815 | Seq. ID No. 4816 | IM | 7 |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|---------------|-------------------|-----------------------|-------|-----|
| 2302 | Seq. ID No. 4817 | Seq. ID No. 4818 | IM | 1 |
| 2303 | Seq. ID No. 4819 | Seq. ID No. 4820 | IM | 1 |
| 2304 | Seq. ID No. 4821 | Seq. ID No. 4822 | Cyto | |
| 2306c | Seq. ID No. 4823 | Seq. ID No. 4824 | Cyto | |
| 2307 | Seq. ID No. 4825 | Seq. ID No. 4826 | IM | 4 |
| 2309a | Seq. ID No. 4829 | Seq. ID No. 4830 | IM | 2 |
| 2309b | Seq. ID No. 4831 | Seq. ID No. 4832 | IM | 2 |
| 2309c | Seq. ID No. 4833 | Seq. ID No. 4834 | IM | 2 |
| 2310 | Seq. ID No. 4835 | Seq. ID No. 4836 | IM | 2 |
| 2311 | Seq. ID No. 4837 | Seq. ID No. 4838 | Cyto | |
| 2312a | Seq. ID No. 4839 | Seq. ID No. 4840 | Cyto | |
| 2312b | Seq. ID No. 4841 | Seq. ID No. 4842 | Cyto | |
| 2312c | Seq. ID No. 4843 | Seq. ID No. 4844 | Cyto | |
| 2314 | Seq. ID No. 4845 | Seq. ID No. 4846 | Cyto | 0 |
| 2315 | Seq. ID No. 4847 | Seq. ID No. 4848 | Cyto | |
| 2316 | Seq. ID No. 4849 | Seq. ID No. 4850 | Cyto | 1 |
| 2317 | Seq. ID No. 4851 | Seq. ID No. 4852 | IM | 2 |
| 2321a | Seq. ID No. 4855 | Seq. ID No. 4856 | Cyto | |
| 2321b | Seq. ID No. 4857 | Seq. ID No. 4858 | Cyto | |
| 2321c | Seq. ID No. 4859 | Seq. ID No. 4860 | Cyto | |
| 2322 | Seq. ID No. 4861 | Seq. ID No. 4862 | IM | 0 |
| 2327 | Seq. ID No. 4865 | Seq. ID No. 4866 | Cyto | |
| 2328 | Seq. ID No. 4867 | Seq. ID No. 4868 | Cyto | |
| 2330 | Seq. ID No. 4877 | Seq. ID No. 4878 | Cyto | |
| 2331 | Seq. ID No. 4879 | Seq. ID No. 4880 | IM | 1 |
| 2333 | Seq. ID No. 4881 | Seq. ID No. 4882 | Cyto | |
| 2335 | Seq. ID No. 4883 | Seq. ID No. 4884 | Cyto | |
| 2336 | Seq. ID No. 4885 | Seq. ID No. 4886 | Cyto | |
| 2337b | Seq. ID No. 4887 | Seq. ID No. 4888 | Cyto | |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|------------|-------------------|-----------------------|-------|-----|
| 2338a | Seq. ID No. 4889 | Seq. ID No. 4890 | Cyto | |
| 2338b | Seq. ID No. 4891 | Seq. ID No. 4892 | Cyto | |
| 2338c | Seq. ID No. 4893 | Seq. ID No. 4894 | Cyto | |
| 2342a | Seq. ID No. 4895 | Seq. ID No. 4896 | Cyto | |
| 2342b | Seq. ID No. 4897 | Seq. ID No. 4898 | Cyto | |
| 2342c | Seq. ID No. 4899 | Seq. ID No. 4900 | Cyto | |
| 2344 | Seq. ID No. 4901 | Seq. ID No. 4902 | IM | 0 |
| 2345 | Seq. ID No. 4903 | Seq. ID No. 4904 | Cyto | 0 |
| 2347 | Seq. ID No. 4905 | Seq. ID No. 4906 | Cyto | 1 |
| 2348 | Seq. ID No. 4907 | Seq. ID No. 4908 | Cyto | 0 |
| 2349a | Seq. ID No. 4909 | Seq. ID No. 4910 | Cyto | |
| 2349b | Seq. ID No. 4911 | Seq. ID No. 4912 | Cyto | |
| 2350a | Seq. ID No. 4913 | Seq. ID No. 4914 | Cyto | |
| 2353 | Seq. ID No. 4915 | Seq. ID No. 4916 | Cyto | |
| 2354 | Seq. ID No. 4917 | Seq. ID No. 4918 | Cyto | |
| 2361a | Seq. ID No. 4925 | Seq. ID No. 4926 | Cyto | |
| 2361b | Seq. ID No. 4927 | Seq. ID No. 4928 | Cyto | |
| 2365a | Seq. ID No. 4933 | Seq. ID No. 4934 | Cyto | 0 |
| 2365b | Seq. ID No. 4935 | Seq. ID No. 4936 | Cyto | 0 |
| 2366a | Seq. ID No. 4937 | Seq. ID No. 4938 | Cyto | |
| 2366b | Seq. ID No. 4939 | Seq. ID No. 4940 | Cyto | |
| 2367 | Seq. ID No. 4941 | Seq. ID No. 4942 | Cyto | |
| 2368 | Seq. ID No. 4943 | Seq. ID No. 4944 | Cyto | |
| 2369 | Seq. ID No. 4945 | Seq. ID No. 4946 | Cyto | |
| 2370 | Seq. ID No. 4947 | Seq. ID No. 4948 | IM | 1 |
| 2373 | Seq. ID No. 4953 | Seq. ID No. 4954 | Cyto | |
| 2374a | Seq. ID No. 4955 | Seq. ID No. 4956 | Cyto | 0 |
| 2374b | Seq. ID No. 4957 | Seq. ID No. 4958 | Cyto | 0 |
| 2376 | Seq. ID No. 4959 | Seq. ID No. 4960 | IM | |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|---------------|-------------------|-----------------------|-------|-----|
| 2377a | Seq. ID No. 4961 | Seq. ID No. 4962 | Cyto | |
| 2377b | Seq. ID No. 4963 | Seq. ID No. 4964 | IM | 1 |
| 2378 | Seq. ID No. 4965 | Seq. ID No. 4966 | Cyto | |
| 2379a | Seq. ID No. 4967 | Seq. ID No. 4968 | Cyto | |
| 2379b | Seq. ID No. 4969 | Seq. ID No. 4970 | Cyto | |
| 2380 | Seq. ID No. 4971 | Seq. ID No. 4972 | Cyto | |
| 2381 | Seq. ID No. 4973 | Seq. ID No. 4974 | Cyto | |
| 2384a | Seq. ID No. 4977 | Seq. ID No. 4978 | Cyto | 0 |
| 2384b | Seq. ID No. 4979 | Seq. ID No. 4980 | Cyto | 0 |
| 2386b | Seq. ID No. 4981 | Seq. ID No. 4982 | IM | 0 |
| 2386c | Seq. ID No. 4983 | Seq. ID No. 4984 | IM | 0 |
| 2387 | Seq. ID No. 4985 | Seq. ID No. 4986 | IM | 5 |
| 2391 | Seq. ID No. 4989 | Seq. ID No. 4990 | IM | 0 |
| 2392 | Seq. ID No. 4991 | Seq. ID No. 4992 | Cyto | 1 |
| 2394 | Seq. ID No. 4993 | Seq. ID No. 4994 | IM | 1 |
| 2395 | Seq. ID No. 4995 | Seq. ID No. 4996 | IM | |
| 2396 | Seq. ID No. 4997 | Seq. ID No. 4998 | Cyto | 0 |
| 2398 | Seq. ID No. 5001 | Seq. ID No. 5002 | Cyto | |
| 2399a | Seq. ID No. 5003 | Seq. ID No. 5004 | Cyto | |
| 2399b | Seq. ID No. 5005 | Seq. ID No. 5006 | Cyto | |
| 2399c | Seq. ID No. 5007 | Seq. ID No. 5008 | Cyto | |
| 2401 | Seq. ID No. 5009 | Seq. ID No. 5010 | Cyto | |
| 2402a | Seq. ID No. 5011 | Seq. ID No. 5012 | IM | 1 |
| 2403a | Seq. ID No. 5015 | Seq. ID No. 5016 | Cyto | 0 |
| 2403b | Seq. ID No. 5017 | Seq. ID No. 5018 | Cyto | 0 |
| 2404a | Seq. ID No. 5019 | Seq. ID No. 5020 | Cyto | 0 |
| 2404b | Seq. ID No. 5021 | Seq. ID No. 5022 | Cyto | 0 |
| 2407a | Seq. ID No. 5023 | Seq. ID No. 5024 | IM | 0 |
| 2409a | Seq. ID No. 5025 | Seq. ID No. 5026 | Cyto | |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|------------|-------------------|-----------------------|-------|-----|
| 2409b | Seq. ID No. 5027 | Seq. ID No. 5028 | Cyto | |
| 2410 | Seq. ID No. 5029 | Seq. ID No. 5030 | Cyto | 0 |
| 2413a | Seq. ID No. 5033 | Seq. ID No. 5034 | Cyto | 0 |
| 2413b | Seq. ID No. 5035 | Seq. ID No. 5036 | Peri | 0 |
| 2415a | Seq. ID No. 5037 | Seq. ID No. 5038 | Cyto | |
| 2415b | Seq. ID No. 5039 | Seq. ID No. 5040 | IM | |
| 2416b | Seq. ID No. 5041 | Seq. ID No. 5042 | OM | 1 |
| 2416c | Seq. ID No. 5043 | Seq. ID No. 5044 | IM | 1 |
| 2417a | Seq. ID No. 5045 | Seq. ID No. 5046 | Cyto | 1 |
| 2417b | Seq. ID No. 5047 | Seq. ID No. 5048 | Cyto | 1 |
| 2418a | Seq. ID No. 5049 | Seq. ID No. 5050 | Cyto | |
| 2418b | Seq. ID No. 5051 | Seq. ID No. 5052 | Cyto | |
| 2420 | Seq. ID No. 5053 | Seq. ID No. 5054 | Cyto | 0 |
| 2421 | Seq. ID No. 5055 | Seq. ID No. 5056 | Cyto | |
| 2422b | Seq. ID No. 5057 | Seq. ID No. 5058 | Cyto | |
| 2422c | Seq. ID No. 5059 | Seq. ID No. 5060 | Cyto | |
| 2424a | Seq. ID No. 5065 | Seq. ID No. 5066 | Cyto | 1 |
| 2424b | Seq. ID No. 5067 | Seq. ID No. 5068 | Cyto | 1 |
| 2426 | Seq. ID No. 5071 | Seq. ID No. 5072 | Cyto | |
| 2428a | Seq. ID No. 5073 | Seq. ID No. 5074 | IM | 3 |
| 2428b | Seq. ID No. 5075 | Seq. ID No. 5076 | IM | 3 |
| 2428c | Seq. ID No. 5077 | Seq. ID No. 5078 | IM | 3 |
| 2429 | Seq. ID No. 5079 | Seq. ID No. 5080 | Cyto | |
| 2432 | Seq. ID No. 5081 | Seq. ID No. 5082 | Cyto | 0 |
| 2433 | Seq. ID No. 5083 | Seq. ID No. 5084 | IM | 1 |
| 2440 | Seq. ID No. 5087 | Seq. ID No. 5088 | Cyto | 0 |
| 2442a | Seq. ID No. 5089 | Seq. ID No. 5090 | Cyto | |
| 2442b | Seq. ID No. 5091 | Seq. ID No. 5092 | Cyto | |
| 2443 | Seq. ID No. 5093 | Seq. ID No. 5094 | Cyto | |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|------------|-------------------|-----------------------|-------|-----|
| 2444a | Seq. ID No. 5095 | Seq. ID No. 5096 | Cyto | |
| 2444b | Seq. ID No. 5097 | Seq. ID No. 5098 | Cyto | |
| 2444c | Seq. ID No. 5099 | Seq. ID No. 5100 | Cyto | |
| 2444d | Seq. ID No. 5101 | Seq. ID No. 5102 | Cyto | |
| 2448b | Seq. ID No. 5105 | Seq. ID No. 5106 | Cyto | |
| 2449a | Seq. ID No. 5107 | Seq. ID No. 5108 | Cyto | |
| 2449b | Seq. ID No. 5109 | Seq. ID No. 5110 | Cyto | |
| 2451 | Seq. ID No. 5111 | Seq. ID No. 5112 | Cyto | |
| 2452 | Seq. ID No. 5113 | Seq. ID No. 5114 | IM | 0 |
| 2455 | Seq. ID No. 5117 | Seq. ID No. 5118 | Cyto | |
| 2456a | Seq. ID No. 5119 | Seq. ID No. 5120 | IM | 4 |
| 2456b | Seq. ID No. 5121 | Seq. ID No. 5122 | IM | 5 |
| 2456e | Seq. ID No. 5127 | Seq. ID No. 5128 | IM | 9 |
| 2461a | Seq. ID No. 5143 | Seq. ID No. 5144 | Cyto | |
| 2461b | Seq. ID No. 5145 | Seq. ID No. 5146 | Cyto | |
| 2462a | Seq. ID No. 5147 | Seq. ID No. 5148 | Cyto | 0 |
| 2462b | Seq. ID No. 5149 | Seq. ID No. 5150 | Cyto | 0 |
| 2463a | Seq. ID No. 5151 | Seq. ID No. 5152 | IM | 1 |
| 2464 | Seq. ID No. 5153 | Seq. ID No. 5154 | IM | 1 |
| 2465a | Seq. ID No. 5155 | Seq. ID No. 5156 | Cyto | |
| 2465b | Seq. ID No. 5157 | Seq. ID No. 5158 | Cyto | |
| 2468b | Seq. ID No. 5161 | Seq. ID No. 5162 | IM | 1 |
| 2469a | Seq. ID No. 5163 | Seq. ID No. 5164 | Cyto | |
| 2470 | Seq. ID No. 5167 | Seq. ID No. 5168 | Cyto | 0 |
| 2471 | Seq. ID No. 5169 | Seq. ID No. 5170 | Cyto | |
| 2473 | Seq. ID No. 5171 | Seq. ID No. 5172 | Cyto | |
| 2474a | Seq. ID No. 5173 | Seq. ID No. 5174 | IM | 3 |
| 2474c | Seq. ID No. 5177 | Seq. ID No. 5178 | IM | 3 |
| 2475a | Seq. ID No. 5179 | Seq. ID No. 5180 | IM | 1 |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|---------------|-------------------|-----------------------|-------|-----|
| 2475b | Seq. ID No. 5181 | Seq. ID No. 5182 | IM | 1 |
| 2475c | Seq. ID No. 5183 | Seq. ID No. 5184 | IM | 1 |
| 2477 | Seq. ID No. 5185 | Seq. ID No. 5186 | Cyto | |
| 2480 | Seq. ID No. 5187 | Seq. ID No. 5188 | Cyto | |
| 2481a | Seq. ID No. 5189 | Seq. ID No. 5190 | IM | 0 |
| 2481b | Seq. ID No. 5191 | Seq. ID No. 5192 | IM | 1 |
| 2482 | Seq. ID No. 5193 | Seq. ID No. 5194 | IM | 2 |
| 2483 | Seq. ID No. 5195 | Seq. ID No. 5196 | Cyto | |
| 2485 | Seq. ID No. 5201 | Seq. ID No. 5202 | Cyto | 1 |
| 2489 | Seq. ID No. 5203 | Seq. ID No. 5204 | Cyto | 1 |
| 2492b | Seq. ID No. 5209 | Seq. ID No. 5210 | IM | 1 |
| 2494 | Seq. ID No. 5211 | Seq. ID No. 5212 | IM | 0 |
| 2495b | Seq. ID No. 5215 | Seq. ID No. 5216 | IM | 10 |
| 2497a | Seq. ID No. 5217 | Seq. ID No. 5218 | IM | 1 |
| 2498b | Seq. ID No. 5221 | Seq. ID No. 5222 | IM | 1 |
| 2500b | Seq. ID No. 5225 | Seq. ID No. 5226 | IM | 1 |
| 2500c | Seq. ID No. 5227 | Seq. ID No. 5228 | IM | 1 |
| 2501a | Seq. ID No. 5229 | Seq. ID No. 5230 | Cyto | |
| 2501b | Seq. ID No. 5231 | Seq. ID No. 5232 | Cyto | |
| 2504a | Seq. ID No. 5233 | Seq. ID No. 5234 | Cyto | |
| 2504b | Seq. ID No. 5235 | Seq. ID No. 5236 | Cyto | |
| 2505 | Seq. ID No. 5237 | Seq. ID No. 5238 | IM | 3 |
| 2506 | Seq. ID No. 5239 | Seq. ID No. 5240 | Cyto | |
| 2507b | Seq. ID No. 5241 | Seq. ID No. 5242 | Cyto | |
| 2507c | Seq. ID No. 5243 | Seq. ID No. 5244 | Cyto | |
| 2510 | Seq. ID No. 5245 | Seq. ID No. 5246 | Cyto | |
| 2512c | Seq. ID No. 5247 | Seq. ID No. 5248 | IM | |
| 2513a | Seq. ID No. 5249 | Seq. ID No. 5250 | Cyto | |
| 2513b | Seq. ID No. 5251 | Seq. ID No. 5252 | Cyto | |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|---------------|-------------------|-----------------------|-------|-----|
| 2513c | Seq. ID No. 5253 | Seq. ID No. 5254 | Cyto | |
| 2514 | Seq. ID No. 5255 | Seq. ID No. 5256 | Cyto | |
| 2515 | Seq. ID No. 5257 | Seq. ID No. 5258 | Cyto | |
| 2516a | Seq. ID No. 5259 | Seq. ID No. 5260 | Cyto | |
| 2516b | Seq. ID No. 5261 | Seq. ID No. 5262 | Cyto | |
| 2517a | Seq. ID No. 5263 | Seq. ID No. 5264 | Cyto | |
| 2517b | Seq. ID No. 5265 | Seq. ID No. 5266 | Cyto | |
| 2519a | Seq. ID No. 5269 | Seq. ID No. 5270 | Cyto | |
| 2519b | Seq. ID No. 5271 | Seq. ID No. 5272 | Cyto | 0 |
| 2523 | Seq. ID No. 5283 | Seq. ID No. 5284 | Cyto | 0 |
| 2525b | Seq. ID No. 5287 | Seq. ID No. 5288 | IM | 1 |
| 2527a | Seq. ID No. 5289 | Seq. ID No. 5290 | Cyto | |
| 2527b | Seq. ID No. 5291 | Seq. ID No. 5292 | Cyto | |
| 2528a | Seq. ID No. 5293 | Seq. ID No. 5294 | Cyto | 0 |
| 2528b | Seq. ID No. 5295 | Seq. ID No. 5296 | Cyto | 0 |
| 2528c | Seq. ID No. 5297 | Seq. ID No. 5298 | Cyto | 0 |
| 2528d | Seq. ID No. 5299 | Seq. ID No. 5300 | Cyto | 0 |
| 2532b | Seq. ID No. 5301 | Seq. ID No. 5302 | Cyto | 1 |
| 2532c | Seq. ID No. 5303 | Seq. ID No. 5304 | Cyto | 1 |
| 2534 | Seq. ID No. 5305 | Seq. ID No. 5306 | Cyto | |
| 2535a | Seq. ID No. 5307 | Seq. ID No. 5308 | Cyto | |
| 2535b | Seq. ID No. 5309 | Seq. ID No. 5310 | Cyto | |
| 2538 | Seq. ID No. 5311 | Seq. ID No. 5312 | Cyto | |
| 2541 | Seq. ID No. 5313 | Seq. ID No. 5314 | Cyto | |
| 2542a | Seq. ID No. 5315 | Seq. ID No. 5316 | Cyto | |
| 2542b | Seq. ID No. 5317 | Seq. ID No. 5318 | Cyto | 0 |
| 2542c | Seq. ID No. 5319 | Seq. ID No. 5320 | Cyto | 0 |
| 2543 | Seq. ID No. 5321 | Seq. ID No. 5322 | Cyto | 0 |
| 2544 | Seq. ID No. 5323 | Seq. ID No. 5324 | Cyto | 0 |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|------------|-------------------|-----------------------|-------|-----|
| 2545 | Seq. ID No. 5325 | Seq. ID No. 5326 | Cyto | |
| 2548a | Seq. ID No. 5333 | Seq. ID No. 5334 | Cyto | 0 |
| 2548b | Seq. ID No. 5335 | Seq. ID No. 5336 | Cyto | 0 |
| 2549 | Seq. ID No. 5337 | Seq. ID No. 5338 | Cyto | 0 |
| 2550b | Seq. ID No. 5339 | Seq. ID No. 5340 | Cyto | |
| 2550e | Seq. ID No. 5343 | Seq. ID No. 5344 | IM | |
| 2552 | Seq. ID No. 5345 | Seq. ID No. 5346 | Cyto | 0 |
| 2553 | Seq. ID No. 5347 | Seq. ID No. 5348 | Cyto | |
| 2554a | Seq. ID No. 5349 | Seq. ID No. 5350 | Cyto | |
| 2554b | Seq. ID No. 5351 | Seq. ID No. 5352 | Cyto | |
| 2555a | Seq. ID No. 5353 | Seq. ID No. 5354 | Cyto | |
| 2555b | Seq. ID No. 5355 | Seq. ID No. 5356 | Cyto | 0 |
| 2555c | Seq. ID No. 5357 | Seq. ID No. 5358 | Cyto | 0 |
| 2555d | Seq. ID No. 5359 | Seq. ID No. 5360 | Cyto | 0 |
| 2558a | Seq. ID No. 5361 | Seq. ID No. 5362 | Cyto | |
| 2558b | Seq. ID No. 5363 | Seq. ID No. 5364 | Cyto | |
| 2559 | Seq. ID No. 5365 | Seq. ID No. 5366 | Cyto | |
| 2561 | Seq. ID No. 5367 | Seq. ID No. 5368 | Cyto | 1 |
| 2562a | Seq. ID No. 5369 | Seq. ID No. 5370 | Cyto | |
| 2562c | Seq. ID No. 5371 | Seq. ID No. 5372 | Cyto | |
| 2563 | Seq. ID No. 5373 | Seq. ID No. 5374 | Cyto | |
| 2564a | Seq. ID No. 5375 | Seq. ID No. 5376 | Cyto | |
| 2564d | Seq. ID No. 5381 | Seq. ID No. 5382 | IM | 1 |
| 2566 | Seq. ID No. 5383 | Seq. ID No. 5384 | IM | |
| 2568 | Seq. ID No. 5389 | Seq. ID No. 5390 | IM | 2 |
| 2572 | Seq. ID No. 5391 | Seq. ID No. 5392 | IM | 0 |
| 2573 | Seq. ID No. 5393 | Seq. ID No. 5394 | Cyto | |
| 2575 | Seq. ID No. 5395 | Seq. ID No. 5396 | Cyto | |
| 2576 | Seq. ID No. 5397 | Seq. ID No. 5398 | Cyto | |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|---------------|-------------------|-----------------------|-------|-----|
| 2578 | Seq. ID No. 5399 | Seq. ID No. 5400 | Cyto | |
| 2579b | Seq. ID No. 5401 | Seq. ID No. 5402 | IM | |
| 2581 | Seq. ID No. 5403 | Seq. ID No. 5404 | IM | 1 |
| 2582b | Seq. ID No. 5407 | Seq. ID No. 5408 | IM | 4 |
| 2582c | Seq. ID No. 5409 | Seq. ID No. 5410 | IM | 4 |
| 2585 | Seq. ID No. 5411 | Seq. ID No. 5412 | IM | |
| 2588 | Seq. ID No. 5417 | Seq. ID No. 5418 | Cyto | 0 |
| 2589 | Seq. ID No. 5419 | Seq. ID No. 5420 | Cyto | 1 |
| 2591 | Seq. ID No. 5421 | Seq. ID No. 5422 | Cyto | 0 |
| 2592 | Seq. ID No. 5423 | Seq. ID No. 5424 | Cyto | |
| 2593a | Seq. ID No. 5425 | Seq. ID No. 5426 | Cyto | 0 |
| 2593b | Seq. ID No. 5427 | Seq. ID No. 5428 | Cyto | 0 |
| 2594a | Seq. ID No. 5429 | Seq. ID No. 5430 | Cyto | |
| 2594b | Seq. ID No. 5431 | Seq. ID No. 5432 | Cyto | |
| 2597a | Seq. ID No. 5435 | Seq. ID No. 5436 | Cyto | |
| 2597b | Seq. ID No. 5437 | Seq. ID No. 5438 | Cyto | |
| 2597c | Seq. ID No. 5439 | Seq. ID No. 5440 | Cyto | |
| 2598 | Seq. ID No. 5441 | Seq. ID No. 5442 | Cyto | 0 |
| 2602 | Seq. ID No. 5443 | Seq. ID No. 5444 | Cyto | 0 |
| 2605a | Seq. ID No. 5445 | Seq. ID No. 5446 | Cyto | |
| 2605b | Seq. ID No. 5447 | Seq. ID No. 5448 | Cyto | |
| 2606 | Seq. ID No. 5449 | Seq. ID No. 5450 | Cyto | |
| 2608 | Seq. ID No. 5451 | Seq. ID No. 5452 | Cyto | |
| 2611 | Seq. ID No. 5455 | Seq. ID No. 5456 | Cyto | |
| 2613 | Seq. ID No. 5457 | Seq. ID No. 5458 | Cyto | 0 |
| 2616e | Seq. ID No. 5467 | Seq. ID No. 5468 | IM | 5 |
| 2616f | Seq. ID No. 5469 | Seq. ID No. 5470 | IM | 6 |
| 2616g | Seq. ID No. 5471 | Seq. ID No. 5472 | IM | 7 |
| 2616h | Seq. ID No. 5473 | Seq. ID No. 5474 | IM | 7 |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|---------------|-------------------|-----------------------|-------|-----|
| 2617a | Seq. ID No. 5475 | Seq. ID No. 5476 | IM | |
| 2617b | Seq. ID No. 5477 | Seq. ID No. 5478 | IM | |
| 2618a | Seq. ID No. 5479 | Seq. ID No. 5480 | IM | |
| 2618b | Seq. ID No. 5481 | Seq. ID No. 5482 | IM | |
| 2619 | Seq. ID No. 5483 | Seq. ID No. 5484 | Cyto | |
| 2620 | Seq. ID No. 5485 | Seq. ID No. 5486 | IM | 0 |
| 2621a | Seq. ID No. 5487 | Seq. ID No. 5488 | IM | 1 |
| 2623a | Seq. ID No. 5489 | Seq. ID No. 5490 | Cyto | |
| 2624a | Seq. ID No. 5493 | Seq. ID No. 5494 | Cyto | 0 |
| 2624b | Seq. ID No. 5495 | Seq. ID No. 5496 | Cyto | 0 |
| 2625b | Seq. ID No. 5499 | Seq. ID No. 5500 | IM | 3 |
| 2626a | Seq. ID No. 5501 | Seq. ID No. 5502 | Cyto | |
| 2626b | Seq. ID No. 5503 | Seq. ID No. 5504 | Cyto | |
| 2627a | Seq. ID No. 5505 | Seq. ID No. 5506 | Cyto | |
| 2627b | Seq. ID No. 5507 | Seq. ID No. 5508 | Cyto | |
| 2629a | Seq. ID No. 5511 | Seq. ID No. 5512 | Cyto | |
| 2633a | Seq. ID No. 5519 | Seq. ID No. 5520 | Cyto | |
| 2633b | Seq. ID No. 5521 | Seq. ID No. 5522 | Cyto | |
| 2633c | Seq. ID No. 5523 | Seq. ID No. 5524 | Cyto | |
| 2633e | Seq. ID No. 5527 | Seq. ID No. 5528 | IM | 1 |
| 2643a | Seq. ID No. 5535 | Seq. ID No. 5536 | Cyto | 1 |
| 2643b | Seq. ID No. 5537 | Seq. ID No. 5538 | IM | 2 |
| 2645 | Seq. ID No. 5539 | Seq. ID No. 5540 | Cyto | |
| 2647 | Seq. ID No. 5541 | Seq. ID No. 5542 | Cyto | |
| 2649 | Seq. ID No. 5547 | Seq. ID No. 5548 | IM | 1 |
| 2650 | Seq. ID No. 5549 | Seq. ID No. 5550 | IM | 3 |
| 2652a | Seq. ID No. 5551 | Seq. ID No. 5552 | Cyto | |
| 2652b | Seq. ID No. 5553 | Seq. ID No. 5554 | Cyto | |
| 2655a | Seq. ID No. 5555 | Seq. ID No. 5556 | Cyto | |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|------------|-------------------|-----------------------|-------|-----|
| 2655b | Seq. ID No. 5557 | Seq. ID No. 5558 | IM | 1 |
| 2656 | Seq. ID No. 5559 | Seq. ID No. 5560 | Cyto | 0 |
| 2658a | Seq. ID No. 5561 | Seq. ID No. 5562 | Cyto | 0 |
| 2658b | Seq. ID No. 5563 | Seq. ID No. 5564 | Cyto | 0 |
| 2659a | Seq. ID No. 5565 | Seq. ID No. 5566 | IM | 3 |
| 2659b | Seq. ID No. 5567 | Seq. ID No. 5568 | IM | 4 |
| 2662 | Seq. ID No. 5571 | Seq. ID No. 5572 | Cyto | |
| 2664a | Seq. ID No. 5573 | Seq. ID No. 5574 | Cyto | |
| 2664b | Seq. ID No. 5575 | Seq. ID No. 5576 | Cyto | |
| 2665 | Seq. ID No. 5577 | Seq. ID No. 5578 | IM | 1 |
| 2666a | Seq. ID No. 5579 | Seq. ID No. 5580 | Cyto | 0 |
| 2666b | Seq. ID No. 5581 | Seq. ID No. 5582 | Cyto | 0 |
| 2667a | Seq. ID No. 5583 | Seq. ID No. 5584 | IM | |
| 2667b | Seq. ID No. 5585 | Seq. ID No. 5586 | IM | |
| 2674b | Seq. ID No. 5599 | Seq. ID No. 5600 | IM | 11 |
| 2676 | Seq. ID No. 5601 | Seq. ID No. 5602 | Cyto | 0 |
| 2677a | Seq. ID No. 5603 | Seq. ID No. 5604 | IM | 1 |
| 2677b | Seq. ID No. 5605 | Seq. ID No. 5606 | IM | 1 |
| 2677c | Seq. ID No. 5607 | Seq. ID No. 5608 | IM | 1 |
| 2679c | Seq. ID No. 5613 | Seq. ID No. 5614 | IM | 5 |
| 2679d | Seq. ID No. 5615 | Seq. ID No. 5616 | IM | 5 |
| 2680a | Seq. ID No. 5617 | Seq. ID No. 5618 | Cyto | |
| 2680b | Seq. ID No. 5619 | Seq. ID No. 5620 | Cyto | |
| 2684a | Seq. ID No. 5627 | Seq. ID No. 5628 | IM | 0 |
| 2684b | Seq. ID No. 5629 | Seq. ID No. 5630 | IM | 0 |
| 2686 | Seq. ID No. 5631 | Seq. ID No. 5632 | Cyto | 0 |
| 2688b | Seq. ID No. 5635 | Seq. ID No. 5636 | IM | 4 |
| 2690b | Seq. ID No. 5645 | Seq. ID No. 5646 | IM | 1 |
| 2690c | Seq. ID No. 5647 | Seq. ID No. 5648 | IM | 1 |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|------------|-------------------|-----------------------|-------|-----|
| 2693 | Seq. ID No. 5651 | Seq. ID No. 5652 | Cyto | |
| 2694a | Seq. ID No. 5653 | Seq. ID No. 5654 | Cyto | 0 |
| 2694b | Seq. ID No. 5655 | Seq. ID No. 5656 | Cyto | 0 |
| 2695 | Seq. ID No. 5657 | Seq. ID No. 5658 | Cyto | 0 |
| 2696b | Seq. ID No. 5661 | Seq. ID No. 5662 | IM | 8 |
| 2705 | Seq. ID No. 5663 | Seq. ID No. 5664 | Cyto | |
| 2709 | Seq. ID No. 5665 | Seq. ID No. 5666 | Cyto | |
| 2712 | Seq. ID No. 5669 | Seq. ID No. 5670 | IM | 1 |
| 2713 | Seq. ID No. 5671 | Seq. ID No. 5672 | Cyto | |
| 2714 | Seq. ID No. 5673 | Seq. ID No. 5674 | Cyto | |
| 2716a | Seq. ID No. 5675 | Seq. ID No. 5676 | Cyto | |
| 2716b | Seq. ID No. 5677 | Seq. ID No. 5678 | Cyto | |
| 2716c | Seq. ID No. 5679 | Seq. ID No. 5680 | Cyto | |
| 2721a | Seq. ID No. 5691 | Seq. ID No. 5692 | Cyto | |
| 2721b | Seq. ID No. 5693 | Seq. ID No. 5694 | IM | 1 |
| 2722a | Seq. ID No. 5695 | Seq. ID No. 5696 | Cyto | 1 |
| 2722b | Seq. ID No. 5697 | Seq. ID No. 5698 | Cyto | 1 |
| 2724 | Seq. ID No. 5701 | Seq. ID No. 5702 | Cyto | |
| 2726 | Seq. ID No. 5707 | Seq. ID No. 5708 | Cyto | |
| 2731a | Seq. ID No. 5713 | Seq. ID No. 5714 | Cyto | |
| 2731b | Seq. ID No. 5715 | Seq. ID No. 5716 | Cyto | |
| 2732 | Seq. ID No. 5717 | Seq. ID No. 5718 | Cyto | |
| 2734b | Seq. ID No. 5721 | Seq. ID No. 5722 | IM | 4 |
| 2734c | Seq. ID No. 5723 | Seq. ID No. 5724 | IM | 5 |
| 2735a | Seq. ID No. 5725 | Seq. ID No. 5726 | Cyto | 2 |
| 2735b | Seq. ID No. 5727 | Seq. ID No. 5728 | Cyto | 2 |
| 2738b | Seq. ID No. 5731 | Seq. ID No. 5732 | IM | 11 |
| 2742a | Seq. ID No. 5737 | Seq. ID No. 5738 | Cyto | |
| 2743a | Seq. ID No. 5741 | Seq. ID No. 5742 | Cyto | 1 |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|-----------------------|--------------------------|------------------------------|--------------|------------|
| 2743b | Seq. ID No. 5743 | Seq. ID No. 5744 | Cyto | 1 |
| 2744 | Seq. ID No. 5745 | Seq. ID No. 5746 | IM | |
| 2745a | Seq. ID No. 5747 | Seq. ID No. 5748 | Cyto | 1 |
| 2745b | Seq. ID No. 5749 | Seq. ID No. 5750 | Cyto | 1 |
| 2746 | Seq. ID No. 5751 | Seq. ID No. 5752 | Cyto | |
| 2747a | Seq. ID No. 5753 | Seq. ID No. 5754 | Cyto | 0 |
| 2747b | Seq. ID No. 5755 | Seq. ID No. 5756 | Cyto | 0 |
| 2748a | Seq. ID No. 5757 | Seq. ID No. 5758 | IM | 10 |
| 2748b | Seq. ID No. 5759 | Seq. ID No. 5760 | IM | 10 |
| 2748c | Seq. ID No. 5761 | Seq. ID No. 5762 | IM | 10 |
| 2749d | Seq. ID No. 5769 | Seq. ID No. 5770 | IM | 9 |
| 2750a | Seq. ID No. 5773 | Seq. ID No. 5774 | Cyto | |
| 2750b | Seq. ID No. 5775 | Seq. ID No. 5776 | Cyto | |
| 2752 | Seq. ID No. 5777 | Seq. ID No. 5778 | Cyto | 0 |
| 2753 | Seq. ID No. 5779 | Seq. ID No. 5780 | Cyto | |
| 2757a | Seq. ID No. 5781 | Seq. ID No. 5782 | IM | 4 |
| 2758b | Seq. ID No. 5787 | Seq. ID No. 5788 | Cyto | 0 |
| 2758c | Seq. ID No. 5789 | Seq. ID No. 5790 | Cyto | 0 |
| 2759a | Seq. ID No. 5793 | Seq. ID No. 5794 | Cyto | 0 |
| 2759b | Seq. ID No. 5795 | Seq. ID No. 5796 | Cyto | 0 |
| 2760b | Seq. ID No. 5799 | Seq. ID No. 5800 | IM | 1 |
| 2760c | Seq. ID No. 5801 | Seq. ID No. 5802 | IM | 1 |
| 2762 | Seq. ID No. 5803 | Seq. ID No. 5804 | Cyto | 0 |
| 2763a | Seq. ID No. 5805 | Seq. ID No. 5806 | IM | 2 |
| 2763b | Seq. ID No. 5807 | Seq. ID No. 5808 | IM | 2 |
| 2763c | Seq. ID No. 5809 | Seq. ID No. 5810 | IM | 2 |
| 2764 | Seq. ID No. 5811 | Seq. ID No. 5812 | IM | |
| 2765b | Seq. ID No. 5813 | Seq. ID No. 5814 | Cyto | 1 |
| 2765c | Seq. ID No. 5815 | Seq. ID No. 5816 | Cyto | 1 |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|---------------|-------------------|-----------------------|-------|-----|
| 2766a | Seq. ID No. 5817 | Seq. ID No. 5818 | IM | 0 |
| 2766b | Seq. ID No. 5819 | Seq. ID No. 5820 | IM | 0 |
| 2768a | Seq. ID No. 5821 | Seq. ID No. 5822 | IM | 0 |
| 2768b | Seq. ID No. 5823 | Seq. ID No. 5824 | IM | 0 |
| 2768c | Seq. ID No. 5825 | Seq. ID No. 5826 | IM | 0 |
| 2769a | Seq. ID No. 5827 | Seq. ID No. 5828 | IM | 0 |
| 2771a | Seq. ID No. 5831 | Seq. ID No. 5832 | Cyto | |
| 2771b | Seq. ID No. 5833 | Seq. ID No. 5834 | Cyto | |
| 2773 | Seq. ID No. 5835 | Seq. ID No. 5836 | IM | 1 |
| 2774a | Seq. ID No. 5837 | Seq. ID No. 5838 | IM | 2 |
| 2774b | Seq. ID No. 5839 | Seq. ID No. 5840 | IM | 2 |
| 2774c | Seq. ID No. 5841 | Seq. ID No. 5842 | IM | 2 |
| 2776a | Seq. ID No. 5843 | Seq. ID No. 5844 | Cyto | 1 |
| 2776b | Seq. ID No. 5845 | Seq. ID No. 5846 | Cyto | 1 |
| 2777 | Seq. ID No. 5847 | Seq. ID No. 5848 | Cyto | |
| 2778 | Seq. ID No. 5849 | Seq. ID No. 5850 | Cyto | |
| 2779 | Seq. ID No. 5851 | Seq. ID No. 5852 | IM | 1 |
| 2780 | Seq. ID No. 5853 | Seq. ID No. 5854 | Cyto | |
| 2784 | Seq. ID No. 5855 | Seq. ID No. 5856 | Cyto | |
| 2785a | Seq. ID No. 5857 | Seq. ID No. 5858 | Cyto | 1 |
| 2785b | Seq. ID No. 5859 | Seq. ID No. 5860 | Cyto | 1 |
| 2786a | Seq. ID No. 5861 | Seq. ID No. 5862 | IM | 1 |
| 2786b | Seq. ID No. 5863 | Seq. ID No. 5864 | IM | 1 |
| 2786c | Seq. ID No. 5865 | Seq. ID No. 5866 | IM | 1 |
| 2787a | Seq. ID No. 5867 | Seq. ID No. 5868 | Cyto | 1 |
| 2787b | Seq. ID No. 5869 | Seq. ID No. 5870 | Cyto | 1 |
| 2787c | Seq. ID No. 5871 | Seq. ID No. 5872 | Cyto | 1 |
| 2788b | Seq. ID No. 5873 | Seq. ID No. 5874 | Cyto | 1 |
| 2789 | Seq. ID No. 5875 | Seq. ID No. 5876 | Cyto | 0 |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|---------------|-------------------|-----------------------|-------|-----|
| 2790 | Seq. ID No. 5877 | Seq. ID No. 5878 | Cyto | |
| 2793 | Seq. ID No. 5881 | Seq. ID No. 5882 | Cyto | |
| 2798 | Seq. ID No. 5887 | Seq. ID No. 5888 | IM | 2 |
| 2799b | Seq. ID No. 5891 | Seq. ID No. 5892 | IM | 1 |
| 2804 | Seq. ID No. 5897 | Seq. ID No. 5898 | IM | 0 |
| 2809 | Seq. ID No. 5903 | Seq. ID No. 5904 | Cyto | |
| 2810b | Seq. ID No. 5907 | Seq. ID No. 5908 | IM | 3 |
| 2810d | Seq. ID No. 5911 | Seq. ID No. 5912 | IM | 4 |
| 2812 | Seq. ID No. 5913 | Seq. ID No. 5914 | Cyto | |
| 2814 | Seq. ID No. 5915 | Seq. ID No. 5916 | IM | 1 |
| 2815 | Seq. ID No. 5917 | Seq. ID No. 5918 | Cyto | |
| 2816 | Seq. ID No. 5919 | Seq. ID No. 5920 | Cyto | |
| 2818c | Seq. ID No. 5925 | Seq. ID No. 5926 | IM | 5 |
| 2819 | Seq. ID No. 5931 | Seq. ID No. 5932 | Cyto | |
| 2820 | Seq. ID No. 5933 | Seq. ID No. 5934 | Cyto | |
| 2821a | Seq. ID No. 5935 | Seq. ID No. 5936 | Cyto | |
| 2821b | Seq. ID No. 5937 | Seq. ID No. 5938 | Cyto | |
| 2822b | Seq. ID No. 5941 | Seq. ID No. 5942 | IM | 11 |
| 2823 | Seq. ID No. 5943 | Seq. ID No. 5944 | Cyto | 0 |
| 2824a | Seq. ID No. 5945 | Seq. ID No. 5946 | Cyto | 1 |
| 2824b | Seq. ID No. 5947 | Seq. ID No. 5948 | Cyto | 1 |
| 2829a | Seq. ID No. 5949 | Seq. ID No. 5950 | Cyto | |
| 2829b | Seq. ID No. 5951 | Seq. ID No. 5952 | Cyto | |
| 2831b | Seq. ID No. 5953 | Seq. ID No. 5954 | Cyto | |
| 2832 | Seq. ID No. 5955 | Seq. ID No. 5956 | Cyto | |
| 2833 | Seq. ID No. 5957 | Seq. ID No. 5958 | Cyto | |
| 2834a | Seq. ID No. 5959 | Seq. ID No. 5960 | Cyto | 0 |
| 2834b | Seq. ID No. 5961 | Seq. ID No. 5962 | Cyto | 0 |
| 2837a | Seq. ID No. 5963 | Seq. ID No. 5964 | IM | 2 |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|------------|-------------------|-----------------------|-------|-----|
| 2837b | Seq. ID No. 5965 | Seq. ID No. 5966 | IM | 3 |
| 2842a | Seq. ID No. 5967 | Seq. ID No. 5968 | Cyto | |
| 2842b | Seq. ID No. 5969 | Seq. ID No. 5970 | Cyto | |
| 2843a | Seq. ID No. 5971 | Seq. ID No. 5972 | Cyto | |
| 2843b | Seq. ID No. 5973 | Seq. ID No. 5974 | Cyto | |
| 2845 | Seq. ID No. 5975 | Seq. ID No. 5976 | Cyto | |
| 2846a | Seq. ID No. 5977 | Seq. ID No. 5978 | Cyto | |
| 2846b | Seq. ID No. 5979 | Seq. ID No. 5980 | Peri | |
| 2848 | Seq. ID No. 5981 | Seq. ID No. 5982 | Cyto | |
| 2850 | Seq. ID No. 5983 | Seq. ID No. 5984 | Cyto | |
| 2851 | Seq. ID No. 5985 | Seq. ID No. 5986 | Cyto | 0 |
| 2852 | Seq. ID No. 5987 | Seq. ID No. 5988 | IM | 1 |
| 2853 | Seq. ID No. 5989 | Seq. ID No. 5990 | Cyto | |
| 2854a | Seq. ID No. 5991 | Seq. ID No. 5992 | IM | |
| 2854b | Seq. ID No. 5993 | Seq. ID No. 5994 | IM | |
| 2855 | Seq. ID No. 5995 | Seq. ID No. 5996 | Cyto | |
| 2856a | Seq. ID No. 5997 | Seq. ID No. 5998 | IM | 8 |
| 2856b | Seq. ID No. 5999 | Seq. ID No. 6000 | IM | 8 |
| 2856c | Seq. ID No. 6001 | Seq. ID No. 6002 | IM | 8 |
| 2857 | Seq. ID No. 6003 | Seq. ID No. 6004 | Cyto | |
| 2859 | Seq. ID No. 6005 | Seq. ID No. 6006 | Cyto | |
| 2860a | Seq. ID No. 6007 | Seq. ID No. 6008 | Cyto | 0 |
| 2860b | Seq. ID No. 6009 | Seq. ID No. 6010 | Cyto | 0 |
| 2860c | Seq. ID No. 6011 | Seq. ID No. 6012 | Cyto | 0 |
| 2862 | Seq. ID No. 6013 | Seq. ID No. 6014 | Cyto | 2 |
| 2863 | Seq. ID No. 6015 | Seq. ID No. 6016 | Cyto | |
| 2864 | Seq. ID No. 6017 | Seq. ID No. 6018 | Cyto | 2 |
| 2868a | Seq. ID No. 6019 | Seq. ID No. 6020 | Cyto | |
| 2868b | Seq. ID No. 6021 | Seq. ID No. 6022 | IM | |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|---------------|-------------------|-----------------------|-------|-----|
| 2871 | Seq. ID No. 6029 | Seq. ID No. 6030 | Cyto | |
| 2872 | Seq. ID No. 6031 | Seq. ID No. 6032 | Cyto | |
| 2875 | Seq. ID No. 6033 | Seq. ID No. 6034 | Cyto | 0 |
| 2877 | Seq. ID No. 6035 | Seq. ID No. 6036 | Cyto | |
| 2879a | Seq. ID No. 6037 | Seq. ID No. 6038 | Cyto | 0 |
| 2879b | Seq. ID No. 6039 | Seq. ID No. 6040 | Cyto | 0 |
| 2879c | Seq. ID No. 6041 | Seq. ID No. 6042 | Cyto | 0 |
| 2882 | Seq. ID No. 6045 | Seq. ID No. 6046 | IM | 2 |
| 2883b | Seq. ID No. 6049 | Seq. ID No. 6050 | IM | 7 |
| 2883c | Seq. ID No. 6051 | Seq. ID No. 6052 | IM | 7 |
| 2886a | Seq. ID No. 6055 | Seq. ID No. 6056 | Cyto | 0 |
| 2886b | Seq. ID No. 6057 | Seq. ID No. 6058 | Cyto | 0 |
| 2887b | Seq. ID No. 6061 | Seq. ID No. 6062 | IM | 2 |
| 2890 | Seq. ID No. 6065 | Seq. ID No. 6066 | IM | 1 |
| 2891b | Seq. ID No. 6069 | Seq. ID No. 6070 | Cyto | 1 |
| 2891c | Seq. ID No. 6071 | Seq. ID No. 6072 | Cyto | 1 |
| 2893b | Seq. ID No. 6073 | Seq. ID No. 6074 | IM | 1 |
| 2894a | Seq. ID No. 6075 | Seq. ID No. 6076 | Cyto | |
| 2894b | Seq. ID No. 6077 | Seq. ID No. 6078 | Cyto | |
| 2894c | Seq. ID No. 6079 | Seq. ID No. 6080 | Cyto | |
| 2895 | Seq. ID No. 6081 | Seq. ID No. 6082 | IM | |
| 2897a | Seq. ID No. 6083 | Seq. ID No. 6084 | Cyto | |
| 2897b | Seq. ID No. 6085 | Seq. ID No. 6086 | Cyto | |
| 2901b | Seq. ID No. 6093 | Seq. ID No. 6094 | IM | 2 |
| 2904 | Seq. ID No. 6097 | Seq. ID No. 6098 | Cyto | |
| 2905a | Seq. ID No. 6099 | Seq. ID No. 6100 | Cyto | |
| 2905b | Seq. ID No. 6101 | Seq. ID No. 6102 | Cyto | 0 |
| 2909a | Seq. ID No. 6105 | Seq. ID No. 6106 | Cyto | |
| 2912 | Seq. ID No. 6113 | Seq. ID No. 6114 | Cyto | |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|---------------|-------------------|-----------------------|-------|-----|
| 2915a | Seq. ID No. 6119 | Seq. ID No. 6120 | Cyto | |
| 2915b | Seq. ID No. 6121 | Seq. ID No. 6122 | Cyto | |
| 2915c | Seq. ID No. 6123 | Seq. ID No. 6124 | Cyto | |
| 2916 | Seq. ID No. 6125 | Seq. ID No. 6126 | Cyto | |
| 2917 | Seq. ID No. 6127 | Seq. ID No. 6128 | OM | 1 |
| 2918 | Seq. ID No. 6129 | Seq. ID No. 6130 | Cyto | 0 |
| 2920 | Seq. ID No. 6131 | Seq. ID No. 6132 | IM | 2 |
| 2921 | Seq. ID No. 6133 | Seq. ID No. 6134 | IM | 0 |
| 2923b | Seq. ID No. 6139 | Seq. ID No. 6140 | Cyto | |
| 2923c | Seq. ID No. 6141 | Seq. ID No. 6142 | Cyto | |
| 2925a | Seq. ID No. 6143 | Seq. ID No. 6144 | Cyto | |
| 2925b | Seq. ID No. 6145 | Seq. ID No. 6146 | Cyto | |
| 2926a | Seq. ID No. 6147 | Seq. ID No. 6148 | Cyto | |
| 2926b | Seq. ID No. 6149 | Seq. ID No. 6150 | Cyto | |
| 2926c | Seq. ID No. 6151 | Seq. ID No. 6152 | Cyto | |
| 2928a | Seq. ID No. 6153 | Seq. ID No. 6154 | Cyto | |
| 2928b | Seq. ID No. 6155 | Seq. ID No. 6156 | Cyto | |
| 2928c | Seq. ID No. 6157 | Seq. ID No. 6158 | Cyto | |
| 2933a | Seq. ID No. 6167 | Seq. ID No. 6168 | Cyto | |
| 2934 | Seq. ID No. 6171 | Seq. ID No. 6172 | Cyto | 1 |
| 2935a | Seq. ID No. 6173 | Seq. ID No. 6174 | Cyto | |
| 2935b | Seq. ID No. 6175 | Seq. ID No. 6176 | Cyto | 0 |
| 2936 | Seq. ID No. 6177 | Seq. ID No. 6178 | IM | 2 |
| 2939a | Seq. ID No. 6179 | Seq. ID No. 6180 | Cyto | |
| 2939b | Seq. ID No. 6181 | Seq. ID No. 6182 | Cyto | |
| 2943c | Seq. ID No. 6193 | Seq. ID No. 6194 | IM | 6 |
| 2943d | Seq. ID No. 6195 | Seq. ID No. 6196 | IM | 6 |
| 2945b | Seq. ID No. 6199 | Seq. ID No. 6200 | IM | 0 |
| 2947 | Seq. ID No. 6201 | Seq. ID No. 6202 | Cyto | |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|---------------|-------------------|-----------------------|-------|-----|
| 2948c | Seq. ID No. 6207 | Seq. ID No. 6208 | IM | 6 |
| 2950a | Seq. ID No. 6211 | Seq. ID No. 6212 | Cyto | |
| 2950b | Seq. ID No. 6213 | Seq. ID No. 6214 | Cyto | |
| 2951 | Seq. ID No. 6215 | Seq. ID No. 6216 | Cyto | |
| 2954 | Seq. ID No. 6219 | Seq. ID No. 6220 | IM | 7 |
| 2955f | Seq. ID No. 6231 | Seq. ID No. 6232 | IM | 12 |
| 2955g | Seq. ID No. 6233 | Seq. ID No. 6234 | IM | 12 |
| 2958b | Seq. ID No. 6239 | Seq. ID No. 6240 | IM | 2 |
| 2962a | Seq. ID No. 6247 | Seq. ID No. 6248 | Cyto | |
| 2963 | Seq. ID No. 6251 | Seq. ID No. 6252 | Cyto | |
| 2965b | Seq. ID No. 6255 | Seq. ID No. 6256 | IM | 2 |
| 2965c | Seq. ID No. 6257 | Seq. ID No. 6258 | IM | 2 |
| 2967 | Seq. ID No. 6261 | Seq. ID No. 6262 | Cyto | |
| 2971a | Seq. ID No. 6269 | Seq. ID No. 6270 | Cyto | 0 |
| 2971b | Seq. ID No. 6271 | Seq. ID No. 6272 | Cyto | 0 |
| 2975 | Seq. ID No. 6277 | Seq. ID No. 6278 | Cyto | 1 |
| 2977a | Seq. ID No. 6279 | Seq. ID No. 6280 | IM | 4 |
| 2977b | Seq. ID No. 6281 | Seq. ID No. 6282 | IM | 4 |
| 2979 | Seq. ID No. 6287 | Seq. ID No. 6288 | IM | 4 |
| 2980b | Seq. ID No. 6291 | Seq. ID No. 6292 | IM | 5 |
| 2980c | Seq. ID No. 6293 | Seq. ID No. 6294 | IM | 5 |
| 2980d | Seq. ID No. 6295 | Seq. ID No. 6296 | IM | 5 |
| 2980e | Seq. ID No. 6297 | Seq. ID No. 6298 | IM | 5 |
| 2984 | Seq. ID No. 6299 | Seq. ID No. 6300 | Cyto | 0 |
| 2986c | Seq. ID No. 6305 | Seq. ID No. 6306 | IM | 7 |
| 2988a | Seq. ID No. 6307 | Seq. ID No. 6308 | Cyto | 1 |
| 2988b | Seq. ID No. 6309 | Seq. ID No. 6310 | Cyto | 1 |
| 2988c | Seq. ID No. 6311 | Seq. ID No. 6312 | Cyto | 1 |
| 2989 | Seq. ID No. 6313 | Seq. ID No. 6314 | Cyto | |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|------------|-------------------|-----------------------|-------|-----|
| 2990 | Seq. ID No. 6315 | Seq. ID No. 6316 | Cyto | 0 |
| 2991a | Seq. ID No. 6317 | Seq. ID No. 6318 | IM | |
| 2991b | Seq. ID No. 6319 | Seq. ID No. 6320 | Cyto | 0 |
| 2991c | Seq. ID No. 6321 | Seq. ID No. 6322 | Cyto | 0 |
| 2992 | Seq. ID No. 6323 | Seq. ID No. 6324 | IM | 4 |
| 2995a | Seq. ID No. 6329 | Seq. ID No. 6330 | Cyto | 1 |
| 2995b | Seq. ID No. 6331 | Seq. ID No. 6332 | Cyto | 1 |
| 2997 | Seq. ID No. 6333 | Seq. ID No. 6334 | Cyto | |
| 2998a | Seq. ID No. 6335 | Seq. ID No. 6336 | Cyto | |
| 2998b | Seq. ID No. 6337 | Seq. ID No. 6338 | Cyto | |
| 2999 | Seq. ID No. 6339 | Seq. ID No. 6340 | Cyto | |
| 3001 | Seq. ID No. 6341 | Seq. ID No. 6342 | Cyto | |
| 3003 | Seq. ID No. 6343 | Seq. ID No. 6344 | Cyto | |
| 3005 | Seq. ID No. 6345 | Seq. ID No. 6346 | Cyto | |
| 3008a | Seq. ID No. 6347 | Seq. ID No. 6348 | Cyto | |
| 3008b | Seq. ID No. 6349 | Seq. ID No. 6350 | Cyto | |
| 3008c | Seq. ID No. 6351 | Seq. ID No. 6352 | Cyto | |
| 3008d | Seq. ID No. 6353 | Seq. ID No. 6354 | Cyto | |
| 3010a | Seq. ID No. 6355 | Seq. ID No. 6356 | Cyto | |
| 3010b | Seq. ID No. 6357 | Seq. ID No. 6358 | Cyto | |
| 3012 | Seq. ID No. 6359 | Seq. ID No. 6360 | Cyto | |
| 3015 | Seq. ID No. 6361 | Seq. ID No. 6362 | IM | 7 |
| 3016c | Seq. ID No. 6367 | Seq. ID No. 6368 | IM | 7 |
| 3017 | Seq. ID No. 6369 | Seq. ID No. 6370 | Cyto | |
| 3018a | Seq. ID No. 6371 | Seq. ID No. 6372 | Cyto | |
| 3018b | Seq. ID No. 6373 | Seq. ID No. 6374 | Cyto | |
| 3020 | Seq. ID No. 6375 | Seq. ID No. 6376 | IM | |
| 3022 | Seq. ID No. 6379 | Seq. ID No. 6380 | Cyto | |
| 3024b | Seq. ID No. 6385 | Seq. ID No. 6386 | Cyto | 1 |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|---------------|-------------------|-----------------------|-------|-----|
| 3026a | Seq. ID No. 6387 | Seq. ID No. 6388 | Cyto | |
| 3026b | Seq. ID No. 6389 | Seq. ID No. 6390 | Cyto | |
| 3028a | Seq. ID No. 6391 | Seq. ID No. 6392 | Cyto | |
| 3028b | Seq. ID No. 6393 | Seq. ID No. 6394 | Cyto | |
| 3028c | Seq. ID No. 6395 | Seq. ID No. 6396 | Cyto | |
| 3029a | Seq. ID No. 6397 | Seq. ID No. 6398 | Cyto | |
| 3029b | Seq. ID No. 6399 | Seq. ID No. 6400 | Cyto | |
| 3031a | Seq. ID No. 6401 | Seq. ID No. 6402 | Cyto | |
| 3031b | Seq. ID No. 6403 | Seq. ID No. 6404 | Cyto | |
| 3032a | Seq. ID No. 6405 | Seq. ID No. 6406 | Cyto | |
| 3032b | Seq. ID No. 6407 | Seq. ID No. 6408 | Cyto | |
| 3033a | Seq. ID No. 6409 | Seq. ID No. 6410 | Cyto | |
| 3033b | Seq. ID No. 6411 | Seq. ID No. 6412 | Cyto | |
| 3035 | Seq. ID No. 6413 | Seq. ID No. 6414 | Cyto | 1 |
| 3037b | Seq. ID No. 6417 | Seq. ID No. 6418 | IM | 1 |
| 3038 | Seq. ID No. 6419 | Seq. ID No. 6420 | Cyto | |
| 3040a | Seq. ID No. 6421 | Seq. ID No. 6422 | Cyto | |
| 3040b | Seq. ID No. 6423 | Seq. ID No. 6424 | Cyto | |
| 3044 | Seq. ID No. 6433 | Seq. ID No. 6434 | IM | 1 |
| 3045a | Seq. ID No. 6435 | Seq. ID No. 6436 | Cyto | |
| 3045b | Seq. ID No. 6437 | Seq. ID No. 6438 | Cyto | |
| 3048a | Seq. ID No. 6439 | Seq. ID No. 6440 | Cyto | |
| 3049a | Seq. ID No. 6441 | Seq. ID No. 6442 | Cyto | |
| 3049b | Seq. ID No. 6443 | Seq. ID No. 6444 | Cyto | |
| 3049c | Seq. ID No. 6445 | Seq. ID No. 6446 | Cyto | |
| 3051a | Seq. ID No. 6447 | Seq. ID No. 6448 | Cyto | |
| 3051b | Seq. ID No. 6449 | Seq. ID No. 6450 | Cyto | |
| 3052 | Seq. ID No. 6451 | Seq. ID No. 6452 | Cyto | |
| 3054 | Seq. ID No. 6453 | Seq. ID No. 6454 | Cyto | |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|---------------|-------------------|-----------------------|-------|-----|
| 3055a | Seq. ID No. 6455 | Seq. ID No. 6456 | Cyto | |
| 3055b | Seq. ID No. 6457 | Seq. ID No. 6458 | Cyto | |
| 3057 | Seq. ID No. 6459 | Seq. ID No. 6460 | Cyto | |
| 3059 | Seq. ID No. 6461 | Seq. ID No. 6462 | Cyto | |
| 3060 | Seq. ID No. 6463 | Seq. ID No. 6464 | IM | 5 |
| 3061 | Seq. ID No. 6465 | Seq. ID No. 6466 | Peri | 1 |
| 3062 | Seq. ID No. 6467 | Seq. ID No. 6468 | IM | 5 |
| 3063a | Seq. ID No. 6469 | Seq. ID No. 6470 | Cyto | 0 |
| 3063b | Seq. ID No. 6471 | Seq. ID No. 6472 | Cyto | 0 |
| 3065a | Seq. ID No. 6475 | Seq. ID No. 6476 | Cyto | |
| 3065b | Seq. ID No. 6477 | Seq. ID No. 6478 | Cyto | |
| 3067 | Seq. ID No. 6481 | Seq. ID No. 6482 | Cyto | |
| 3068 | Seq. ID No. 6483 | Seq. ID No. 6484 | Cyto | |
| 3069 | Seq. ID No. 6485 | Seq. ID No. 6486 | Cyto | |
| 3071 | Seq. ID No. 6487 | Seq. ID No. 6488 | Cyto | |
| 3072a | Seq. ID No. 6489 | Seq. ID No. 6490 | Cyto | |
| 3073 | Seq. ID No. 6491 | Seq. ID No. 6492 | Cyto | |
| 3074 | Seq. ID No. 6493 | Seq. ID No. 6494 | Cyto | |
| 3075 | Seq. ID No. 6495 | Seq. ID No. 6496 | Cyto | |
| 3077a | Seq. ID No. 6499 | Seq. ID No. 6500 | Cyto | |
| 3077b | Seq. ID No. 6501 | Seq. ID No. 6502 | Cyto | |
| 3077c | Seq. ID No. 6503 | Seq. ID No. 6504 | Cyto | |
| 3078 | Seq. ID No. 6505 | Seq. ID No. 6506 | Cyto | 1 |
| 3079 | Seq. ID No. 6507 | Seq. ID No. 6508 | IM | 1 |
| 3081a | Seq. ID No. 6509 | Seq. ID No. 6510 | Cyto | |
| 3081b | Seq. ID No. 6511 | Seq. ID No. 6512 | Cyto | |
| 3083c | Seq. ID No. 6513 | Seq. ID No. 6514 | Cyto | |
| 3083d | Seq. ID No. 6515 | Seq. ID No. 6516 | Cyto | |
| 3086 | Seq. ID No. 6519 | Seq. ID No. 6520 | Cyto | |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|------------|-------------------|-----------------------|-------|-----|
| 3087a | Seq. ID No. 6521 | Seq. ID No. 6522 | Cyto | |
| 3087c | Seq. ID No. 6523 | Seq. ID No. 6524 | Cyto | |
| 3088 | Seq. ID No. 6525 | Seq. ID No. 6526 | Cyto | |
| 3089a | Seq. ID No. 6527 | Seq. ID No. 6528 | Cyto | |
| 3089b | Seq. ID No. 6529 | Seq. ID No. 6530 | Cyto | |
| 3090 | Seq. ID No. 6531 | Seq. ID No. 6532 | Cyto | |
| 3091 | Seq. ID No. 6533 | Seq. ID No. 6534 | Cyto | |
| 3092a | Seq. ID No. 6535 | Seq. ID No. 6536 | Cyto | |
| 3092b | Seq. ID No. 6537 | Seq. ID No. 6538 | Cyto | |
| 3095 | Seq. ID No. 6539 | Seq. ID No. 6540 | IM | 1 |
| 3097 | Seq. ID No. 6545 | Seq. ID No. 6546 | Cyto | |
| 3098a | Seq. ID No. 6547 | Seq. ID No. 6548 | Cyto | 0 |
| 3098b | Seq. ID No. 6549 | Seq. ID No. 6550 | Cyto | 0 |
| 3098c | Seq. ID No. 6551 | Seq. ID No. 6552 | Cyto | 0 |
| 3099 | Seq. ID No. 6553 | Seq. ID No. 6554 | Cyto | |
| 3101 | Seq. ID No. 6559 | Seq. ID No. 6560 | Cyto | |
| 3102 | Seq. ID No. 6561 | Seq. ID No. 6562 | Peri | 2 |
| 3103b | Seq. ID No. 6563 | Seq. ID No. 6564 | Cyto | |
| 3104 | Seq. ID No. 6565 | Seq. ID No. 6566 | Cyto | |
| 3105 | Seq. ID No. 6567 | Seq. ID No. 6568 | Cyto | |
| 3106 | Seq. ID No. 6569 | Seq. ID No. 6570 | Cyto | |
| 3108a | Seq. ID No. 6575 | Seq. ID No. 6576 | Cyto | |
| 3108b | Seq. ID No. 6577 | Seq. ID No. 6578 | Peri | |
| 3109 | Seq. ID No. 6579 | Seq. ID No. 6580 | Cyto | |
| 3110b | Seq. ID No. 6583 | Seq. ID No. 6584 | IM | 2 |
| 3113 | Seq. ID No. 6585 | Seq. ID No. 6586 | IM | 1 |
| 3116 | Seq. ID No. 6587 | Seq. ID No. 6588 | Cyto | 1 |
| 3118a | Seq. ID No. 6589 | Seq. ID No. 6590 | Cyto | |
| 3118b | Seq. ID No. 6591 | Seq. ID No. 6592 | Cyto | |

TABLE 6: SIGNALP: NON-SECRETORY

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | PSORT | MSD |
|-----------------------|--------------------------|------------------------------|--------------|------------|
| 3121 | Seq. ID No. 6605 | Seq. ID No. 6606 | Cyto | |
| 3122a | Seq. ID No. 6607 | Seq. ID No. 6608 | Cyto | 2 |
| 3122b | Seq. ID No. 6609 | Seq. ID No. 6610 | Cyto | 2 |
| 3123a | Seq. ID No. 6611 | Seq. ID No. 6612 | IM | 0 |
| 3123b | Seq. ID No. 6613 | Seq. ID No. 6614 | IM | 0 |
| 3124 | Seq. ID No. 6615 | Seq. ID No. 6616 | IM | 1 |
| 3126 | Seq. ID No. 6617 | Seq. ID No. 6618 | Cyto | 0 |
| 3129a | Seq. ID No. 6619 | Seq. ID No. 6620 | Cyto | 2 |
| 3129b | Seq. ID No. 6621 | Seq. ID No. 6622 | Cyto | 2 |
| 3131 | Seq. ID No. 6623 | Seq. ID No. 6624 | IM | 2 |
| 3134a | Seq. ID No. 6625 | Seq. ID No. 6626 | Cyto | 0 |
| 3134b | Seq. ID No. 6627 | Seq. ID No. 6628 | IM | 0 |
| 3138 | Seq. ID No. 6629 | Seq. ID No. 6630 | IM | 0 |
| 3141 | Seq. ID No. 6633 | Seq. ID No. 6634 | Cyto | 2 |
| 3145a | Seq. ID No. 6635 | Seq. ID No. 6636 | Cyto | 0 |
| 3147a | Seq. ID No. 6641 | Seq. ID No. 6642 | Cyto | |
| 3149a | Seq. ID No. 6647 | Seq. ID No. 6648 | Cyto | |

Listed in Table 7 are 287 ORFs whose Pfam results predict possible secreted, surface or membrane localization of proteins encoded by the ORFs.

TABLE 7: PFAM

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | Pfam |
|-----------------------|------------------------------|----------------------------------|---------------------------------------|
| 51c | Seq. ID No. 89 | Seq. ID No. 90 | Sodium:dicarboxylate symporter family |
| 80c | Seq. ID No. 145 | Seq. ID No. 146 | Formate/nitrite transporter |
| 85b | Seq. ID No. 155 | Seq. ID No. 156 | ABC transporter |
| 88 | Seq. ID No. 167 | Seq. ID No. 168 | Binding-protein-dependent transport s |
| 91b | Seq. ID No. 173 | Seq. ID No. 174 | NLPA lipoprotein |
| 99 | Seq. ID No. 191 | Seq. ID No. 192 | Phosphotransferase system, EIIC |

TABLE 7: PFAM

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | Pfam |
|---------------|----------------------|--------------------------|---------------------------------------|
| 109d | Seq. ID No. 215 | Seq. ID No. 216 | ABC 3 transport family |
| 111b | Seq. ID No. 219 | Seq. ID No. 220 | ABC 3 transport family |
| 112a | Seq. ID No. 221 | Seq. ID No. 222 | ABC transporter |
| 112b | Seq. ID No. 223 | Seq. ID No. 224 | ABC transporter |
| 114 | Seq. ID No. 225 | Seq. ID No. 226 | Periplasmic solute binding protein fa |
| 121 | Seq. ID No. 233 | Seq. ID No. 234 | ABC transporter |
| 124c | Seq. ID No. 239 | Seq. ID No. 240 | Binding-protein-dependent transport s |
| 129b | Seq. ID No. 251 | Seq. ID No. 252 | Phosphotransferase system, EIIC |
| 129c | Seq. ID No. 253 | Seq. ID No. 254 | PTS system, Fructose specific IIB sub |
| 138a | Seq. ID No. 271 | Seq. ID No. 272 | E1-E2 ATPase |
| 145d | Seq. ID No. 291 | Seq. ID No. 292 | AbgT putative transporter family |
| 162c | Seq. ID No. 331 | Seq. ID No. 332 | Cobalt transport protein |
| 165a | Seq. ID No. 341 | Seq. ID No. 342 | ABC transporter |
| 167 | Seq. ID No. 345 | Seq. ID No. 346 | ABC transporter |
| 180b | Seq. ID No. 375 | Seq. ID No. 376 | eubacterial secY protein |
| 245c | Seq. ID No. 501 | Seq. ID No. 502 | Permease family |
| 246b | Seq. ID No. 505 | Seq. ID No. 506 | Cell cycle protein |
| 248b | Seq. ID No. 511 | Seq. ID No. 512 | Cell cycle protein |
| 255c | Seq. ID No. 529 | Seq. ID No. 530 | Sodium:solute symporter family |
| 273a | Seq. ID No. 567 | Seq. ID No. 568 | phosphotransferase system, EIIB |
| 273b | Seq. ID No. 569 | Seq. ID No. 570 | Phosphotransferase system, EIIC |
| 277c | Seq. ID No. 575 | Seq. ID No. 576 | ApbE family |
| 283b | Seq. ID No. 593 | Seq. ID No. 594 | Bacterial extracellular solute-bindin |
| 284a | Seq. ID No. 595 | Seq. ID No. 596 | Binding-protein-dependent transport s |
| 286a | Seq. ID No. 601 | Seq. ID No. 602 | ABC transporter |
| 311 | Seq. ID No. 637 | Seq. ID No. 638 | ABC transporter |
| 315 | Seq. ID No. 649 | Seq. ID No. 650 | ABC transporter |
| 318c | Seq. ID No. 661 | Seq. ID No. 662 | NLPA lipoprotein |
| 321 | Seq. ID No. 669 | Seq. ID No. 670 | NLPA lipoprotein |

TABLE 7: PFAM

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | Pfam |
|------------|-------------------|-----------------------|---|
| 324 | Seq. ID No. 675 | Seq. ID No. 676 | NLPA lipoprotein |
| 327c | Seq. ID No. 681 | Seq. ID No. 682 | Binding-protein-dependent transport s |
| 329 | Seq. ID No. 683 | Seq. ID No. 684 | ABC transporter |
| 342h | Seq. ID No. 729 | Seq. ID No. 730 | Uncharacterized membrane protein fami |
| 351 | Seq. ID No. 753 | Seq. ID No. 754 | ABC transporter |
| 358b | Seq. ID No. 779 | Seq. ID No. 780 | Na ⁺ /H ⁺ antiporter family |
| 384b | Seq. ID No. 827 | Seq. ID No. 828 | Phosphotransferase system, EIIC |
| 391 | Seq. ID No. 839 | Seq. ID No. 840 | Glycosyl transferase family 8 |
| 418b | Seq. ID No. 895 | Seq. ID No. 896 | E1-E2 ATPase |
| 435 | Seq. ID No. 939 | Seq. ID No. 940 | Metallo-beta-lactamase superfamily |
| 450a | Seq. ID No. 969 | Seq. ID No. 970 | ABC transporter |
| 452e | Seq. ID No. 985 | Seq. ID No. 986 | Predicted permease |
| 464c | Seq. ID No. 1015 | Seq. ID No. 1016 | Cation transport protein |
| 472f | Seq. ID No. 1039 | Seq. ID No. 1040 | Cation transport protein |
| 492 | Seq. ID No. 1075 | Seq. ID No. 1076 | NLPA lipoprotein |
| 524b | Seq. ID No. 1137 | Seq. ID No. 1138 | 60Kd inner membrane protein |
| 533 | Seq. ID No. 1155 | Seq. ID No. 1156 | Phosphotransferase system, EIIC |
| 539c | Seq. ID No. 1163 | Seq. ID No. 1164 | ABC transporter |
| 543a | Seq. ID No. 1175 | Seq. ID No. 1176 | ABC transporter |
| 561 | Seq. ID No. 1223 | Seq. ID No. 1224 | ABC transporter |
| 564c | Seq. ID No. 1231 | Seq. ID No. 1232 | BioY family |
| 570b | Seq. ID No. 1237 | Seq. ID No. 1238 | ABC transporter |
| 573 | Seq. ID No. 1241 | Seq. ID No. 1242 | ABC transporter |
| 586a | Seq. ID No. 1261 | Seq. ID No. 1262 | Large-conductance mechanosensitive ch |
| 613d | Seq. ID No. 1331 | Seq. ID No. 1332 | Sodium/hydrogen exchanger family |
| 618 | Seq. ID No. 1339 | Seq. ID No. 1340 | Mechanosensitive ion channel |
| 631d | Seq. ID No. 1369 | Seq. ID No. 1370 | 5'-nucleotidase, C-terminal domain |
| 698 | Seq. ID No. 1477 | Seq. ID No. 1478 | LrgA family |
| 722c | Seq. ID No. 1517 | Seq. ID No. 1518 | PTS system Galactitol-specific IIC co |

TABLE 7: PFAM

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | Pfam |
|------------|-------------------|-----------------------|---------------------------------------|
| 728b | Seq. ID No. 1531 | Seq. ID No. 1532 | PTS system sorbose-specific iic compo |
| 730d | Seq. ID No. 1539 | Seq. ID No. 1540 | PTS system mannose/fructose/sorbose f |
| 738c | Seq. ID No. 1549 | Seq. ID No. 1550 | PTS system Galactitol-specific IIC co |
| 744 | Seq. ID No. 1563 | Seq. ID No. 1564 | Bacterial extracellular solute-bindin |
| 745b | Seq. ID No. 1567 | Seq. ID No. 1568 | Binding-protein-dependent transport s |
| 746b | Seq. ID No. 1571 | Seq. ID No. 1572 | Binding-protein-dependent transport s |
| 747 | Seq. ID No. 1573 | Seq. ID No. 1574 | ABC transporter |
| 754d | Seq. ID No. 1589 | Seq. ID No. 1590 | PTS system, Lactose/Cellobiose specif |
| 758 | Seq. ID No. 1595 | Seq. ID No. 1596 | PTS system, Lactose/Cellobiose specif |
| 788b | Seq. ID No. 1647 | Seq. ID No. 1648 | Binding-protein-dependent transport s |
| 792 | Seq. ID No. 1657 | Seq. ID No. 1658 | ABC transporter |
| 859d | Seq. ID No. 1771 | Seq. ID No. 1772 | E1-E2 ATPase |
| 866b | Seq. ID No. 1785 | Seq. ID No. 1786 | ABC transporter |
| 868b | Seq. ID No. 1789 | Seq. ID No. 1790 | Binding-protein-dependent transport s |
| 885 | Seq. ID No. 1819 | Seq. ID No. 1820 | Histidine kinase-, DNA gyrase B-, and |
| 886 | Seq. ID No. 1821 | Seq. ID No. 1822 | D-alanyl-D-alanine carboxypeptidase |
| 977a | Seq. ID No. 1969 | Seq. ID No. 1970 | NLPA lipoprotein |
| 998b | Seq. ID No. 2015 | Seq. ID No. 2016 | PAP2 superfamily |
| 1016c | Seq. ID No. 2047 | Seq. ID No. 2048 | ABC transporter |
| 1036a | Seq. ID No. 2087 | Seq. ID No. 2088 | Binding-protein-dependent transport s |
| 1036b | Seq. ID No. 2089 | Seq. ID No. 2090 | Bacterial extracellular solute-bindin |
| 1037 | Seq. ID No. 2093 | Seq. ID No. 2094 | ABC transporter |
| 1047b | Seq. ID No. 2115 | Seq. ID No. 2116 | Periplasmic solute binding protein fa |
| 1049a | Seq. ID No. 2117 | Seq. ID No. 2118 | ABC transporter |
| 1050d | Seq. ID No. 2127 | Seq. ID No. 2128 | ABC 3 transport family |
| 1060b | Seq. ID No. 2141 | Seq. ID No. 2142 | Bacterial transferase hexapeptide (fo |
| 1077e | Seq. ID No. 2179 | Seq. ID No. 2180 | Polysaccharide biosynthesis protein |
| 1094b | Seq. ID No. 2207 | Seq. ID No. 2208 | Peptidase family M41 |
| 1100 | Seq. ID No. 2223 | Seq. ID No. 2224 | ABC transporter |

TABLE 7: PFAM

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | Pfam |
|------------|-------------------|-----------------------|---------------------------------------|
| 1127 | Seq. ID No. 2253 | Seq. ID No. 2254 | ABC transporter |
| 1140c | Seq. ID No. 2275 | Seq. ID No. 2276 | E1-E2 ATPase |
| 1149 | Seq. ID No. 2301 | Seq. ID No. 2302 | ABC transporter |
| 1152g | Seq. ID No. 2315 | Seq. ID No. 2316 | Binding-protein-dependent transport s |
| 1155g | Seq. ID No. 2329 | Seq. ID No. 2330 | Binding-protein-dependent transport s |
| 1165 | Seq. ID No. 2343 | Seq. ID No. 2344 | NLP/P60 family |
| 1167b | Seq. ID No. 2349 | Seq. ID No. 2350 | His Kinase A (phosphoacceptor) domain |
| 1171c | Seq. ID No. 2363 | Seq. ID No. 2364 | ABC transporter |
| 1179c | Seq. ID No. 2381 | Seq. ID No. 2382 | Metallo-beta-lactamase superfamily |
| 1180e | Seq. ID No. 2391 | Seq. ID No. 2392 | Phospholipase D. Active site motif |
| 1191 | Seq. ID No. 2417 | Seq. ID No. 2418 | ABC transporter |
| 1192b | Seq. ID No. 2421 | Seq. ID No. 2422 | Peptidase family M48 |
| 1194 | Seq. ID No. 2423 | Seq. ID No. 2424 | LemA family |
| 1197 | Seq. ID No. 2429 | Seq. ID No. 2430 | Peptidase family U7 |
| 1221a | Seq. ID No. 2481 | Seq. ID No. 2482 | ABC transporter |
| 1224a | Seq. ID No. 2487 | Seq. ID No. 2488 | CAAX amino terminal protease family |
| 1224b | Seq. ID No. 2489 | Seq. ID No. 2490 | CAAX amino terminal protease family |
| 1224c | Seq. ID No. 2491 | Seq. ID No. 2492 | CAAX amino terminal protease family |
| 1233a | Seq. ID No. 2509 | Seq. ID No. 2510 | ABC transporter |
| 1234c | Seq. ID No. 2519 | Seq. ID No. 2520 | Uncharacterised protein family (UPF00 |
| 1237 | Seq. ID No. 2525 | Seq. ID No. 2526 | LysM domain |
| 1245d | Seq. ID No. 2547 | Seq. ID No. 2548 | AbgT putative transporter family |
| 1246b | Seq. ID No. 2553 | Seq. ID No. 2554 | Metallo-beta-lactamase superfamily |
| 1250e | Seq. ID No. 2563 | Seq. ID No. 2564 | Sodium:dicarboxylate symporter family |
| 1258c | Seq. ID No. 2587 | Seq. ID No. 2588 | E1-E2 ATPase |
| 1266b | Seq. ID No. 2599 | Seq. ID No. 2600 | AziC protein |
| 1268b | Seq. ID No. 2607 | Seq. ID No. 2608 | ABC transporter |
| 1271 | Seq. ID No. 2613 | Seq. ID No. 2614 | ABC transporter |
| 1288 | Seq. ID No. 2651 | Seq. ID No. 2652 | Cell envelope-related transcriptional |

TABLE 7: PFAM

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | Pfam |
|---------------|----------------------|--------------------------|---------------------------------------|
| 1305b | Seq. ID No. 2675 | Seq. ID No. 2676 | ABC transporter |
| 1308b | Seq. ID No. 2681 | Seq. ID No. 2682 | Predicted permease |
| 1308e | Seq. ID No. 2687 | Seq. ID No. 2688 | Predicted permease |
| 1315 | Seq. ID No. 2693 | Seq. ID No. 2694 | Histidine kinase-, DNA gyrase B-, and |
| 1318 | Seq. ID No. 2699 | Seq. ID No. 2700 | Phosphate-binding protein |
| 1319b | Seq. ID No. 2703 | Seq. ID No. 2704 | Binding-protein-dependent transport s |
| 1320c | Seq. ID No. 2709 | Seq. ID No. 2710 | Binding-protein-dependent transport s |
| 1321 | Seq. ID No. 2711 | Seq. ID No. 2712 | ABC transporter |
| 1333 | Seq. ID No. 2727 | Seq. ID No. 2728 | ABC transporter |
| 1348 | Seq. ID No. 2753 | Seq. ID No. 2754 | Prolipoprotein diacylglycerol transfe |
| 1384a | Seq. ID No. 2819 | Seq. ID No. 2820 | Preprotein translocase SecG subunit |
| 1384b | Seq. ID No. 2821 | Seq. ID No. 2822 | Preprotein translocase SecG subunit |
| 1384c | Seq. ID No. 2823 | Seq. ID No. 2824 | Preprotein translocase SecG subunit |
| 1408 | Seq. ID No. 2867 | Seq. ID No. 2868 | ABC transporter |
| 1410 | Seq. ID No. 2871 | Seq. ID No. 2872 | ABC transporter |
| 1426b | Seq. ID No. 2907 | Seq. ID No. 2908 | Ribonuclease BN-like family |
| 1431 | Seq. ID No. 2919 | Seq. ID No. 2920 | ABC transporter |
| 1442b | Seq. ID No. 2957 | Seq. ID No. 2958 | ABC transporter |
| 1447b | Seq. ID No. 2971 | Seq. ID No. 2972 | Sodium/glutamate symporter |
| 1451 | Seq. ID No. 2979 | Seq. ID No. 2980 | ABC transporter |
| 1457c | Seq. ID No. 2999 | Seq. ID No. 3000 | Na ⁺ /Pi-cotransporter |
| 1462b | Seq. ID No. 3005 | Seq. ID No. 3006 | ABC transporter |
| 1466d | Seq. ID No. 3019 | Seq. ID No. 3020 | ABC transporter |
| 1471 | Seq. ID No. 3035 | Seq. ID No. 3036 | Ion transport protein |
| 1484b | Seq. ID No. 3065 | Seq. ID No. 3066 | Divalent cation transporter |
| 1488g | Seq. ID No. 3085 | Seq. ID No. 3086 | Divalent cation transporter |
| 1517c | Seq. ID No. 3149 | Seq. ID No. 3150 | Mechanosensitive ion channel |
| 1530b | Seq. ID No. 3165 | Seq. ID No. 3166 | Transglycosylase |
| 1543 | Seq. ID No. 3183 | Seq. ID No. 3184 | NLP/P60 family |

TABLE 7: PFAM

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | Pfam |
|------------|-------------------|-----------------------|--|
| 1554c | Seq. ID No. 3203 | Seq. ID No. 3204 | Bacterial type II secretion system pr |
| 1556c | Seq. ID No. 3211 | Seq. ID No. 3212 | ABC transporter |
| 1573 | Seq. ID No. 3251 | Seq. ID No. 3252 | ABC transporter |
| 1578 | Seq. ID No. 3259 | Seq. ID No. 3260 | ABC transporter |
| 1606b | Seq. ID No. 3319 | Seq. ID No. 3320 | Histidine kinase-, DNA gyrase B-, and |
| 1607b | Seq. ID No. 3323 | Seq. ID No. 3324 | 60Kd inner membrane protein |
| 1616b | Seq. ID No. 3335 | Seq. ID No. 3336 | FtsK/SpoIIIE family |
| 1619 | Seq. ID No. 3337 | Seq. ID No. 3338 | Basic membrane protein |
| 1623c | Seq. ID No. 3347 | Seq. ID No. 3348 | ABC transporter |
| 1626b | Seq. ID No. 3359 | Seq. ID No. 3360 | Branched-chain amino acid transport s |
| 1634c | Seq. ID No. 3377 | Seq. ID No. 3378 | Mannosyl-glycoprotein endo-beta-N-ace |
| 1639b | Seq. ID No. 3379 | Seq. ID No. 3380 | LysM domain |
| 1646f | Seq. ID No. 3399 | Seq. ID No. 3400 | Polysaccharide biosynthesis protein |
| 1659c | Seq. ID No. 3425 | Seq. ID No. 3426 | Na ⁺ /H ⁺ antiporter family |
| 1683b | Seq. ID No. 3483 | Seq. ID No. 3484 | Ribonuclease BN-like family |
| 1688c | Seq. ID No. 3495 | Seq. ID No. 3496 | Glycosyl transferase |
| 1689a | Seq. ID No. 3497 | Seq. ID No. 3498 | Glycosyl transferase |
| 1694d | Seq. ID No. 3519 | Seq. ID No. 3520 | Cell envelope-related transcriptional |
| 1699b | Seq. ID No. 3529 | Seq. ID No. 3530 | Polysaccharide biosynthesis protein |
| 1737b | Seq. ID No. 3599 | Seq. ID No. 3600 | GA module |
| 1743 | Seq. ID No. 3611 | Seq. ID No. 3612 | GA module |
| 1744b | Seq. ID No. 3615 | Seq. ID No. 3616 | GA module |
| 1747 | Seq. ID No. 3619 | Seq. ID No. 3620 | GA module |
| 1769b | Seq. ID No. 3663 | Seq. ID No. 3664 | Type IV leader peptidase family |
| 1804b | Seq. ID No. 3739 | Seq. ID No. 3740 | Na ⁺ /H ⁺ antiporter subunit |
| 1808d | Seq. ID No. 3759 | Seq. ID No. 3760 | NADH-Ubiquinone/plastoquinone (comple |
| 1809f | Seq. ID No. 3771 | Seq. ID No. 3772 | NADH-Ubiquinone/plastoquinone (comple |
| 1816c | Seq. ID No. 3797 | Seq. ID No. 3798 | Transglycosylase |
| 1833 | Seq. ID No. 3825 | Seq. ID No. 3826 | 5'-nucleotidase, C-terminal domain |

TABLE 7: PFAM

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | Pfam |
|------------|-------------------|-----------------------|---------------------------------------|
| 1838c | Seq. ID No. 3841 | Seq. ID No. 3842 | ABC transporter |
| 1842d | Seq. ID No. 3855 | Seq. ID No. 3856 | Phosphotransferase system, EIIC |
| 1845c | Seq. ID No. 3863 | Seq. ID No. 3864 | Voltage gated chloride channel |
| 1861b | Seq. ID No. 3901 | Seq. ID No. 3902 | ABC transporter |
| 1875c | Seq. ID No. 3929 | Seq. ID No. 3930 | Signal peptidase I |
| 1925 | Seq. ID No. 4015 | Seq. ID No. 4016 | Anion-transporting ATPase |
| 1926 | Seq. ID No. 4017 | Seq. ID No. 4018 | ABC transporter |
| 1939c | Seq. ID No. 4055 | Seq. ID No. 4056 | ABC transporter |
| 1946c | Seq. ID No. 4075 | Seq. ID No. 4076 | Sodium:alanine symporter family |
| 1951c | Seq. ID No. 4085 | Seq. ID No. 4086 | ABC transporter |
| 1953 | Seq. ID No. 4089 | Seq. ID No. 4090 | Patatin-like phospholipase |
| 1957 | Seq. ID No. 4099 | Seq. ID No. 4100 | ABC transporter |
| 1958c | Seq. ID No. 4105 | Seq. ID No. 4106 | Branched-chain amino acid transport s |
| 1969 | Seq. ID No. 4129 | Seq. ID No. 4130 | Signal peptidase (SPase) II |
| 2008 | Seq. ID No. 4203 | Seq. ID No. 4204 | Prokaryotic diacylglycerol kinase |
| 2023b | Seq. ID No. 4243 | Seq. ID No. 4244 | Rhomboid family |
| 2024d | Seq. ID No. 4251 | Seq. ID No. 4252 | Penicillin binding protein transpepti |
| 2074b | Seq. ID No. 4343 | Seq. ID No. 4344 | N-acetylmuramoyl-L-alanine amidase |
| 2094 | Seq. ID No. 4383 | Seq. ID No. 4384 | ABC transporter |
| 2142b | Seq. ID No. 4475 | Seq. ID No. 4476 | Phosphatidate cytidylyltransferase |
| 2146 | Seq. ID No. 4481 | Seq. ID No. 4482 | NLPA lipoprotein |
| 2147c | Seq. ID No. 4487 | Seq. ID No. 4488 | Binding-protein-dependent transport s |
| 2149b | Seq. ID No. 4491 | Seq. ID No. 4492 | ABC transporter |
| 2165 | Seq. ID No. 4533 | Seq. ID No. 4534 | Uncharacterised protein family (UPF01 |
| 2212b | Seq. ID No. 4627 | Seq. ID No. 4628 | LysM domain |
| 2249 | Seq. ID No. 4705 | Seq. ID No. 4706 | Bacterial extracellular solute-bindin |
| 2253d | Seq. ID No. 4713 | Seq. ID No. 4714 | Binding-protein-dependent transport s |
| 2255b | Seq. ID No. 4717 | Seq. ID No. 4718 | Binding-protein-dependent transport s |
| 2256 | Seq. ID No. 4719 | Seq. ID No. 4720 | ABC transporter |

TABLE 7: PFAM

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | Pfam |
|------------|-------------------|-----------------------|---------------------------------------|
| 2260c | Seq. ID No. 4729 | Seq. ID No. 4730 | ABC transporter |
| 2288 | Seq. ID No. 4789 | Seq. ID No. 4790 | Patatin-like phospholipase |
| 2290 | Seq. ID No. 4791 | Seq. ID No. 4792 | ATP synthase subunit D |
| 2291a | Seq. ID No. 4793 | Seq. ID No. 4794 | ATP synthase alpha/beta family, nucle |
| 2292c | Seq. ID No. 4803 | Seq. ID No. 4804 | ATP synthase alpha/beta family, nucle |
| 2300 | Seq. ID No. 4813 | Seq. ID No. 4814 | ATP synthase subunit C |
| 2301 | Seq. ID No. 4815 | Seq. ID No. 4816 | V-type ATPase 116kDa subunit family |
| 2307 | Seq. ID No. 4825 | Seq. ID No. 4826 | Binding-protein-dependent transport s |
| 2309c | Seq. ID No. 4833 | Seq. ID No. 4834 | Binding-protein-dependent transport s |
| 2311 | Seq. ID No. 4837 | Seq. ID No. 4838 | ABC transporter |
| 2329d | Seq. ID No. 4875 | Seq. ID No. 4876 | Competence protein |
| 2331 | Seq. ID No. 4879 | Seq. ID No. 4880 | Helix-hairpin-helix motif |
| 2357 | Seq. ID No. 4919 | Seq. ID No. 4920 | Histidine kinase-, DNA gyrase B-, and |
| 2363b | Seq. ID No. 4931 | Seq. ID No. 4932 | Uncharacterized BCR, YceG family COG1 |
| 2370 | Seq. ID No. 4947 | Seq. ID No. 4948 | Bacterial transferase hexapeptide (fo |
| 2387 | Seq. ID No. 4985 | Seq. ID No. 4986 | Uncharacterized BCR, YitT family COG1 |
| 2428c | Seq. ID No. 5077 | Seq. ID No. 5078 | Pyridoxal-phosphate dependent enzyme |
| 2453 | Seq. ID No. 5115 | Seq. ID No. 5116 | Periplasmic binding protein |
| 2455 | Seq. ID No. 5117 | Seq. ID No. 5118 | ABC transporter |
| 2456e | Seq. ID No. 5127 | Seq. ID No. 5128 | FecCD transport family |
| 2458g | Seq. ID No. 5141 | Seq. ID No. 5142 | FecCD transport family |
| 2482 | Seq. ID No. 5193 | Seq. ID No. 5194 | YGGT family |
| 2495b | Seq. ID No. 5215 | Seq. ID No. 5216 | Glycosyl transferase |
| 2497b | Seq. ID No. 5219 | Seq. ID No. 5220 | Penicillin binding protein transpepti |
| 2520b | Seq. ID No. 5275 | Seq. ID No. 5276 | PEP-utilizing enzyme, TIM barrel doma |
| 2564d | Seq. ID No. 5381 | Seq. ID No. 5382 | D-alanyl-D-alanine carboxypeptidase |
| 2568 | Seq. ID No. 5389 | Seq. ID No. 5390 | ABC transporter |
| 2582c | Seq. ID No. 5409 | Seq. ID No. 5410 | Cobalt transport protein |
| 2585 | Seq. ID No. 5411 | Seq. ID No. 5412 | ABC transporter |

TABLE 7: PFAM

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | Pfam |
|------------|-------------------|-----------------------|---------------------------------------|
| 2617a | Seq. ID No. 5475 | Seq. ID No. 5476 | ABC transporter |
| 2623b | Seq. ID No. 5491 | Seq. ID No. 5492 | PPIC-type PPIASE domain |
| 2629b | Seq. ID No. 5513 | Seq. ID No. 5514 | Bacterial extracellular solute-bindin |
| 2633a | Seq. ID No. 5519 | Seq. ID No. 5520 | Bacterial extracellular solute-bindin |
| 2633d | Seq. ID No. 5525 | Seq. ID No. 5526 | Bacterial extracellular solute-bindin |
| 2637a | Seq. ID No. 5529 | Seq. ID No. 5530 | Bacterial extracellular solute-bindin |
| 2643b | Seq. ID No. 5537 | Seq. ID No. 5538 | Transglycosylase |
| 2655b | Seq. ID No. 5557 | Seq. ID No. 5558 | Uncharacterized secreted proteins, Ya |
| 2666b | Seq. ID No. 5581 | Seq. ID No. 5582 | MutS family, N-terminal putative DNA |
| 2674b | Seq. ID No. 5599 | Seq. ID No. 5600 | Carbon starvation protein CstA |
| 2688c | Seq. ID No. 5637 | Seq. ID No. 5638 | CDP-alcohol phosphatidyltransferase |
| 2718c | Seq. ID No. 5685 | Seq. ID No. 5686 | Uncharacterized BCR, COG1963 |
| 2734c | Seq. ID No. 5723 | Seq. ID No. 5724 | Cation efflux family |
| 2747b | Seq. ID No. 5755 | Seq. ID No. 5756 | Metallo-beta-lactamase superfamily |
| 2748c | Seq. ID No. 5761 | Seq. ID No. 5762 | Uncharacterized membrane protein fami |
| 2801b | Seq. ID No. 5895 | Seq. ID No. 5896 | HAMP domain |
| 2805b | Seq. ID No. 5901 | Seq. ID No. 5902 | Predicted permease |
| 2809 | Seq. ID No. 5903 | Seq. ID No. 5904 | ABC transporter |
| 2810d | Seq. ID No. 5911 | Seq. ID No. 5912 | Predicted permease |
| 2812 | Seq. ID No. 5913 | Seq. ID No. 5914 | ABC transporter |
| 2816 | Seq. ID No. 5919 | Seq. ID No. 5920 | ABC transporter |
| 2818b | Seq. ID No. 5923 | Seq. ID No. 5924 | Binding-protein-dependent transport s |
| 2818e | Seq. ID No. 5929 | Seq. ID No. 5930 | Bacterial extracellular solute-bindin |
| 2856c | Seq. ID No. 6001 | Seq. ID No. 6002 | E1-E2 ATPase |
| 2881 | Seq. ID No. 6043 | Seq. ID No. 6044 | Mannosyl-glycoprotein endo-beta-N-ace |
| 2883d | Seq. ID No. 6053 | Seq. ID No. 6054 | Predicted permease |
| 2886a | Seq. ID No. 6055 | Seq. ID No. 6056 | ABC transporter |
| 2900b | Seq. ID No. 6089 | Seq. ID No. 6090 | LysM domain |
| 2902 | Seq. ID No. 6095 | Seq. ID No. 6096 | LysM domain |

TABLE 7: PFAM

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | Pfam |
|------------|-------------------|-----------------------|---------------------------------------|
| 2909d | Seq. ID No. 6111 | Seq. ID No. 6112 | Sulfatase |
| 2913b | Seq. ID No. 6117 | Seq. ID No. 6118 | Histidine kinase-, DNA gyrase B-, and |
| 2931c | Seq. ID No. 6165 | Seq. ID No. 6166 | Sodium:solute symporter family |
| 2933b | Seq. ID No. 6169 | Seq. ID No. 6170 | BNR/Asp-box repeat |
| 2941c | Seq. ID No. 6187 | Seq. ID No. 6188 | ABC transporter |
| 2943d | Seq. ID No. 6195 | Seq. ID No. 6196 | ABC transporter |
| 2954 | Seq. ID No. 6219 | Seq. ID No. 6220 | Bacitracin resistance protein BacA |
| 2955g | Seq. ID No. 6233 | Seq. ID No. 6234 | Permease family |
| 2971a | Seq. ID No. 6269 | Seq. ID No. 6270 | ABC transporter |
| 2974b | Seq. ID No. 6275 | Seq. ID No. 6276 | Predicted permease |
| 2977a | Seq. ID No. 6279 | Seq. ID No. 6280 | Chromate transporter |
| 2979 | Seq. ID No. 6287 | Seq. ID No. 6288 | Chromate transporter |
| 2980e | Seq. ID No. 6297 | Seq. ID No. 6298 | NQR2, RnfD, RnfE family |
| 2984 | Seq. ID No. 6299 | Seq. ID No. 6300 | Respiratory-chain NADH dehydrogenase |
| 2986c | Seq. ID No. 6305 | Seq. ID No. 6306 | NQR2, RnfD, RnfE family |
| 2988c | Seq. ID No. 6311 | Seq. ID No. 6312 | Respiratory-chain NADH dehydrogenase |
| 3017 | Seq. ID No. 6369 | Seq. ID No. 6370 | ABC transporter |
| 3022 | Seq. ID No. 6379 | Seq. ID No. 6380 | Clp amino terminal domain |
| 3116 | Seq. ID No. 6587 | Seq. ID No. 6588 | Peptidase C1-like family |
| 3118b | Seq. ID No. 6591 | Seq. ID No. 6592 | Peptidase C1-like family |

Listed in Table 8 are ORFs whose BlastP results predict for possible secreted, surface or membrane localization. Keywords used in the search are: MHC, murein, mycolic, NisP, penicillin, peptidoglycan, periplasmic, phosphatidate, pilus, protease, receptor, response regulator, sacculus, secreted protein, sensor protein, signal, surface, teichoic, toxin, transferring, transmembrane, virulence, vitronectin, wall, spor, sporulatio, immunoglobulin, IgG, IgE, IgM, IgD, cueat, teichoic, serum, transport, transporter, channel, porin, hemolysin, phosphatase, vaccine, polysaccharide, rhamnose, dexB, aliA, cap, cps, wze, wzh. A total of 319 ORFs whose BlastP results predict for a possible

secreted, surface or membrane localization for the polypeptides encoded by the ORFs are listed in Table 8.

TABLE 8: BLASTP

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | Keyword | Description | Blast 'e' Value |
|------------|-------------------|-----------------------|---------------|---|-----------------|
| 4b | Seq. ID No. 9 | Seq. ID No. 10 | transport | transporter, <i>Bacillus halodurans</i> Bacteria; Firmicu... | 4.00E-15 |
| 10 | Seq. ID No. 17 | Seq. ID No. 18 | virulence | <i>Neisseria meningitidis</i> virulence pro... Aau72997... | 5.00E-35 |
| 38a | Seq. ID No. 45 | Seq. ID No. 46 | porin | Cephalosporin C amidase enzyme. 3/1991 Aar10055... | 6.00E-30 |
| 39a | Seq. ID No. 49 | Seq. ID No. 50 | capsular | PgsC, <i>Bacillus subtilis</i> Bacteria; Firmicutes; Baci... | 1.00E-18 |
| 40 | Seq. ID No. 53 | Seq. ID No. 54 | capB | CapB, <i>Bacillus subtilis</i> Bacteria; Firmicutes; Baci... | 9.00E-95 |
| 41c | Seq. ID No. 59 | Seq. ID No. 60 | capA | PgsA, <i>Bacillus subtilis</i> Bacteria; Firmicutes; Baci... | 2.00E-44 |
| 51c | Seq. ID No. 89 | Seq. ID No. 90 | membrane | putative transmembrane symporter, <i>Campylobacter jejuni</i> ... | 2.00E-44 |
| 80c | Seq. ID No. 145 | Seq. ID No. 146 | transport | <i>Listeria monocytogenes</i> Bacteria; Firmicutes; Bacil... | 6.00E-32 |
| 85c | Seq. ID No. 157 | Seq. ID No. 158 | envelop | <i>H. pylori</i> cell envelope transporter ... Aaw20861... | 2.00E-50 |
| 88 | Seq. ID No. 167 | Seq. ID No. 168 | TRANSMEMBRANE | PROBABLE TRANSMEMBRANE ABC TRANSPORTER PROTEIN, Ra... | 2.00E-24 |
| 91a | Seq. ID No. 171 | Seq. ID No. 172 | membrane | outer membrane protein, <i>Xylella fastidiosa</i> 9a5c Ba... | 5.00E-25 |

TABLE 8: BLASTP

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | Keyword | Description | Blast 'e' Value |
|---------------|-------------------------|-----------------------------|-------------|---|--------------------|
| 99 | Seq. ID No. 191 | Seq. ID No. 192 | membrane | putative PTS transmembrane compon... AL096852... | 8.00E-38 |
| 109d | Seq. ID No. 215 | Seq. ID No. 216 | membrane | High-affinity zinc uptake system membran, Fusobact... | 2.00E-60 |
| 111a | Seq. ID No. 217 | Seq. ID No. 218 | transporter | YtgC, Bacillus subtilis Bacteria; Firmicutes; Baci... | 7.00E-34 |
| 114 | Seq. ID No. 225 | Seq. ID No. 226 | adhesin | surface adhesin A precursor, Bacillus halodurans B... | 6.00E-42 |
| 124c | Seq. ID No. 239 | Seq. ID No. 240 | membrane | ABC transporter membrane-spanning permease , Strep... | 1.00E-105 |
| 129c | Seq. ID No. 253 | Seq. ID No. 254 | immunogenic | Propionibacterium acnes immunogenic ... Aau44300... | 5.00E-77 |
| 138b | Seq. ID No. 273 | Seq. ID No. 274 | transport | cadmium- transporting ATPase, Bacillus halodurans B... | 1.00E-114 |
| 143 | Seq. ID No. 277 | Seq. ID No. 278 | immunogenic | Propionibacterium acnes immunogenic ... Aau4245... | 1.00E-14 |
| 145c | Seq. ID No. 289 | Seq. ID No. 290 | membrane | hypothetical integral membrane protein, Neisseria ... | 1.00E-92 |
| 162b | Seq. ID No. 329 | Seq. ID No. 330 | membrane | putative ABC transporter membrane-spanning, Strepto... | 2.00E-58 |
| 165b | Seq. ID No. 343 | Seq. ID No. 344 | transport | ABC transporter ATP-binding protein, Lactococcus l... | 7.00E-90 |
| 167 | Seq. ID No. 345 | Seq. ID No. 346 | transport | putative ABC transporter, Enterococcus faecium Bac... | 5.00E-99 |

TABLE 8: BLASTP

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | Keyword | Description | Blast 'e' Value |
|---------------|-------------------------|-----------------------------|---------------|---|--------------------|
| 180b | Seq. ID No. 375 | Seq. ID No. 376 | membrane | preprotein translocase, SecY subunit, Streptococcu... | 1.00E-101 |
| 245c | Seq. ID No. 501 | Seq. ID No. 502 | transporter | uracil permease, Bacillus caldolyticus Bacteria; F... | 2.00E-80 |
| 246b | Seq. ID No. 505 | Seq. ID No. 506 | sporulation | stage V sporulation protein E, Bacillus halodurans... | 3.00E-46 |
| 248b | Seq. ID No. 511 | Seq. ID No. 512 | sporulation | stage V sporulation protein E, Bacillus halodurans... | 3.00E-46 |
| 249b | Seq. ID No. 515 | Seq. ID No. 516 | peptidoglycan | putative peptidoglycan GlcNAc deacetylase, Strepto... | 4.00E-47 |
| 255c | Seq. ID No. 529 | Seq. ID No. 530 | transporter | putative sodium/glucose cotransporter, Salmonella ... | 1.00E-52 |
| 273b | Seq. ID No. 569 | Seq. ID No. 570 | immunogenic | Propionibacterium acnes immunogenic ... Aau41330... | 5.00E-56 |
| 277c | Seq. ID No. 575 | Seq. ID No. 576 | lipoprotein | Listeria monocytogenes Bacteria; Firmicutes; Bacil... | 4.00E-91 |
| 283b | Seq. ID No. 593 | Seq. ID No. 594 | transport | probable amino acid ABC transporter, Clostridium p... | 3.00E-19 |
| 284a | Seq. ID No. 595 | Seq. ID No. 596 | membrane | membrane protein, Vibrio harveyi Bacteria; Proteob... | 5.00E-39 |
| 311 | Seq. ID No. 637 | Seq. ID No. 638 | transporter | ABC transporter (ATP-binding protein), Bacillus ha... | 5.00E-58 |
| 318b | Seq. ID No. 659 | Seq. ID No. 660 | lipoprotein | PUTATIVE OUTER MEMBRANE LIPOPROTEIN, Sinorhizobium ... | 4.00E-34 |

TABLE 8: BLASTP

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | Keyword | Description | Blast 'e' Value |
|------------|-------------------|-----------------------|--------------------|---|-----------------|
| 321 | Seq. ID No. 669 | Seq. ID No. 670 | lipoprotein | Staphylococcus aureus subsp. aureus MW2 Bacteria; ... | 1.00E-54 |
| 324 | Seq. ID No. 675 | Seq. ID No. 676 | lipoprotein | Staphylococcus aureus subsp. aureus MW2 Bacteria; ... | 1.00E-55 |
| 327c | Seq. ID No. 681 | Seq. ID No. 682 | transport | ABC transporter, permease protein, putative, Strep... | 9.00E-36 |
| 342h | Seq. ID No. 729 | Seq. ID No. 730 | transmembrane | putative transmembrane efflux protein, Methanosarc... | 1.00E-33 |
| 358b | Seq. ID No. 779 | Seq. ID No. 780 | transport | transport protein, Fusobacterium nucleatum subsp. ... | 1.00E-119 |
| 382b | Seq. ID No. 819 | Seq. ID No. 820 | secreted protein | putative secreted protein, Listeria innocua Bacter... | 2.00E-37 |
| 418b | Seq. ID No. 895 | Seq. ID No. 896 | transport | metal transporting ATPase, Lactococcus lactis subs... | 1.00E-138 |
| 427a | Seq. ID No. 921 | Seq. ID No. 922 | capsular | unknown, Staphylococcus aureus Bacteria; Firmicute... | 1.00E-46 |
| 431 | Seq. ID No. 935 | Seq. ID No. 936 | protease | Listeria innocua Bacteria; Firmicutes; Bacillus/Ci... | 2.00E-41 |
| 441b | Seq. ID No. 955 | Seq. ID No. 956 | response regulator | histidine kinase YycG, Staphylococcus aureus Bacte... | 1.00E-135 |
| 448 | Seq. ID No. 967 | Seq. ID No. 968 | transporter | accessory protein, Enterococcus faecalis subsp. li... | 1.00E-17 |
| 452e | Seq. ID No. 985 | Seq. ID No. 986 | transporter | membrane subunit, Enterococcus faecalis subsp. liq... | 8.00E-55 |

TABLE 8: BLASTP

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | Keyword | Description | Blast 'e' Value |
|------------|-------------------|-----------------------|---------------|--|-----------------|
| 464d | Seq. ID No. 1017 | Seq. ID No. 1018 | membrane | Trk transporter membrane-spanning protein - K, Str... | 4.00E-82 |
| 472f | Seq. ID No. 1039 | Seq. ID No. 1040 | membrane | potassium uptake protein, Trk family, Streptococcu... | 1.00E-73 |
| 492 | Seq. ID No. 1075 | Seq. ID No. 1076 | lipoprotein | putative outer membrane lipoprotein, Salmonella ty... | 4.00E-28 |
| 499a | Seq. ID No. 1089 | Seq. ID No. 1090 | phosphatase | Exopolyphosphatase -related proteins, Thermoanaerob... | 1.00E-110 |
| 524b | Seq. ID No. 1137 | Seq. ID No. 1138 | sporulation | stage III sporulation, Bacillus subtilis Bacteria;... | 4.00E-38 |
| 561 | Seq. ID No. 1223 | Seq. ID No. 1224 | membrane | ABC transporter ATP-binding/membrane spannin, Stre... | 2.00E-63 |
| 573 | Seq. ID No. 1241 | Seq. ID No. 1242 | transport | ABC-type multidrug/protein/lipid transport, Thermoa... | 2.00E-61 |
| 609a | Seq. ID No. 1315 | Seq. ID No. 1316 | spore | spore wall protein 2 precursor, Encephalitozoon in... | 6.00E-23 |
| 613d | Seq. ID No. 1331 | Seq. ID No. 1332 | TRANSMEMBRANE | HYPOTHETICAL TRANSMEMBRANE PROTEIN, Ralstonia sola... | 5.00E-13 |
| 631d | Seq. ID No. 1369 | Seq. ID No. 1370 | Signal | PROBABLE 5'-NUCLEOTIDASE PRECURSOR (SIGNAL, Sinorhi... | 4.00E-60 |
| 687 | Seq. ID No. 1459 | Seq. ID No. 1460 | transmembrane | Chlamydia pneumoniae transmembrane p... Aay34923... | 6.00E-45 |
| 722c | Seq. ID No. 1517 | Seq. ID No. 1518 | immunogenic | Propionibacterium acnes immunogenic ... Aau6647... | 3.00E-16 |

TABLE 8: BLASTP

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | Keyword | Description | Blast 'e' Value |
|---------------|-------------------------|-----------------------------|-------------|---|--------------------|
| 743b | Seq. ID No. 1561 | Seq. ID No. 1562 | transport | putative alpha-glucosidase, Alicyclobacillus acido... | 2.00E-27 |
| 744 | Seq. ID No. 1563 | Seq. ID No. 1564 | transport | Glycerol-3-phosphate ABC-transporter, Clostridium ... | 1.00E-93 |
| 745b | Seq. ID No. 1567 | Seq. ID No. 1568 | transport | Glycerol-3-phosphate ABC-transporter, permeas, Clo... | 2.00E-49 |
| 746b | Seq. ID No. 1571 | Seq. ID No. 1572 | transport | glycerol-3-phosphate ABC transporter (permease), B... | 1.00E-51 |
| 747 | Seq. ID No. 1573 | Seq. ID No. 1574 | transport | Multiple sugar-binding ABC-transporter, MSM, Clost... | 2.00E-95 |
| 762b | Seq. ID No. 1601 | Seq. ID No. 1602 | cpsL | transposase, Streptococcus pneumoniae Bacteria; Fi... | 5.00E-44 |
| 763b | Seq. ID No. 1607 | Seq. ID No. 1608 | capsular | transposase, Staphylococcus aureus Bacteria; Firmi... | 4.00E-16 |
| 767 | Seq. ID No. 1613 | Seq. ID No. 1614 | capsular | transposase, Staphylococcus aureus Bacteria; Firmi... | 4.00E-14 |
| 770c | Seq. ID No. 1619 | Seq. ID No. 1620 | transport | acetylornitine deacetylase, Bacillus subtilis Bact... | 2.00E-32 |
| 785 | Seq. ID No. 1641 | Seq. ID No. 1642 | phosphatase | phosphatase, Lactococcus lactis subsp. lactis Bact... | 9.00E-29 |
| 788b | Seq. ID No. 1647 | Seq. ID No. 1648 | transport | Staphylococcus aureus subsp. aureus MW2 Bacteria; ... | 1.00E-19 |
| 789c | Seq. ID No. 1653 | Seq. ID No. 1654 | transport | Staphylococcus aureus subsp. aureus MW2 Bacteria; ... | 3.00E-31 |

TABLE 8: BLASTP

| ORF Number | DNA Seq ID Number | Protein Seq ID Number | Keyword | Description | Blast 'e' Value |
|------------|-------------------|-----------------------|--------------------|---|-----------------|
| 792 | Seq. ID No. 1657 | Seq. ID No. 1658 | transport | Staphylococcus aureus subsp. aureus N315 Bacteria;... | 2.00E-87 |
| 794d | Seq. ID No. 1665 | Seq. ID No. 1666 | transporter | alkylphosphonate ABC tranporte, Bacillus haloduran... | 4.00E-26 |
| 813 | Seq. ID No. 1699 | Seq. ID No. 1700 | transporter | cadmium resistance transporter, putative, Streptoc... | 3.00E-57 |
| 830 | Seq. ID No. 1713 | Seq. ID No. 1714 | cpsA | Thermostable carboxypeptidase (cpsA-2), Sulfolobus... | 1.00E-50 |
| 851b | Seq. ID No. 1751 | Seq. ID No. 1752 | penicillin | B. lactofermentum penicillin binding... Aay33117... | 3.00E-23 |
| 859d | Seq. ID No. 1771 | Seq. ID No. 1772 | transport | putative cation transporting P-ty... AF067954... | 1.00E-146 |
| 866b | Seq. ID No. 1785 | Seq. ID No. 1786 | membrane | ATPase, Bacillus subtilis Bacteria; Firmicutes; GE... | 1.00E-124 |
| 868b | Seq. ID No. 1789 | Seq. ID No. 1790 | transporter | betaine ABC transporter permease and substrat, Lac... | 1.00E-71 |
| 870 | Seq. ID No. 1791 | Seq. ID No. 1792 | transporter | Pseudogene, similar to glycine-betaine bindin, Lis... | 1.00E-80 |
| 873c | Seq. ID No. 1797 | Seq. ID No. 1798 | transporter | Pseudogene, similar to glycine-betaine bindin, Lis... | 2.00E-73 |
| 878c | Seq. ID No. 1811 | Seq. ID No. 1812 | hemolysin | Alpha-hemolysin, Fusobacterium nucleatum subsp. nu... | 1.00E-20 |
| 880c | Seq. ID No. 1817 | Seq. ID No. 1818 | response regulator | putative response regulator, Lactobacillus sakei B... | 5.00E-76 |
| 885 | Seq. ID No. 1819 | Seq. ID No. 1820 | response regulator | putative histidine kinase, Lactobacillus sakei Bac... | 1.00E-82 |

TABLE 8: BLASTP

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | Keyword | Description | Blast 'e' Value |
|------------|-------------------|-----------------------|-------------|--|-----------------|
| 886 | Seq. ID No. 1821 | Seq. ID No. 1822 | penicillin | D-alanine carboxypeptidase (PBP-5), <i>Bacillus subtilis</i> ... | 4.00E-55 |
| 929b | Seq. ID No. 1871 | Seq. ID No. 1872 | membrane | PROBABLE BIFUNCTIONAL, <i>Ralstonia solanacearum</i> Bac... | 1.00E-117 |
| 939c | Seq. ID No. 1895 | Seq. ID No. 1896 | transporter | branch-chain amino acid transporter, <i>Bacillus subtilis</i> ... | 3.00E-64 |
| 946 | Seq. ID No. 1905 | Seq. ID No. 1906 | phosphatase | deoxyuridine 5'-triphosphate nucleotidhydrolase, L... | 3.00E-30 |
| 949d | Seq. ID No. 1913 | Seq. ID No. 1914 | PROTEASE | PROBABLE ATP-DEPENDENT PROTEASE, ... AL646064... | 1.00E-101 |
| 951b | Seq. ID No. 1919 | Seq. ID No. 1920 | transporter | Pseudogene, similar to glycine-betaine bindin, <i>Lis...</i> | 4.00E-76 |
| 952b | Seq. ID No. 1923 | Seq. ID No. 1924 | Membrane | Membrane-associated protein containing a homolo, C... | 3.00E-68 |
| 972b | Seq. ID No. 1965 | Seq. ID No. 1966 | phosphatase | exopolyphosphatase, <i>Bacillus halodurans</i> Bacteria; ... | 3.00E-60 |
| 977b | Seq. ID No. 1971 | Seq. ID No. 1972 | lipoprotein | PUTATIVE OUTER MEMBRANE LIPOPROTEIN, <i>Sinorhizobium</i> ... | 1.00E-50 |
| 988d | Seq. ID No. 1999 | Seq. ID No. 2000 | membrane | putative conserved membrane protein, <i>Listeria mono...</i> | 3.00E-35 |
| 1016c | Seq. ID No. 2047 | Seq. ID No. 2048 | transporter | Na ⁺ ABC transporter (ATP-binding protein), <i>NATA, C...</i> | 1.00E-41 |
| 1017d | Seq. ID No. 2055 | Seq. ID No. 2056 | transporter | Na ⁺ ABC transporter, NATB, <i>Clostridium acetobutyli...</i> | 2.00E-17 |

TABLE 8: BLASTP

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | Keyword | Description | Blast 'e' Value |
|------------|-------------------|-----------------------|-------------|---|-----------------|
| 1036c | Seq. ID No. 2091 | Seq. ID No. 2092 | transporter | Listeria monocytogenes Bacteria; Firmicutes; Bacil... | 1.00E-126 |
| 1037 | Seq. ID No. 2093 | Seq. ID No. 2094 | transporter | Glutamine ABC transporter (ATP-binding protein), C... | 1.00E-93 |
| 1047b | Seq. ID No. 2115 | Seq. ID No. 2116 | adhesion | YcdH, Bacillus subtilis Bacteria; Firmicutes; Baci... | 3.00E-35 |
| 1049b | Seq. ID No. 2119 | Seq. ID No. 2120 | transporter | Listeria innocua Bacteria; Firmicutes; Bacillus/Ci... | 8.00E-92 |
| 1050d | Seq. ID No. 2127 | Seq. ID No. 2128 | membrane | Listeria innocua Bacteria; Firmicutes; Bacillus/Ci... | 4.00E-71 |
| 1070b | Seq. ID No. 2165 | Seq. ID No. 2166 | sporulation | stage V sporulation protein C (peptidyl-tRN, Bacil... | 3.00E-47 |
| 1077e | Seq. ID No. 2179 | Seq. ID No. 2180 | membrane | Listeria innocua Bacteria; Firmicutes; Bacillus/Ci... | 3.00E-53 |
| 1094b | Seq. ID No. 2207 | Seq. ID No. 2208 | membrane | S. pneumoniae putative ATPase involved in membrane... | 0 |
| 1100 | Seq. ID No. 2223 | Seq. ID No. 2224 | transporter | probable ABC transporter, Clostridium perfringens ... | 9.00E-27 |
| 1101b | Seq. ID No. 2227 | Seq. ID No. 2228 | transporter | ABC transporter ATP-binding protein, Xanthomonas a... | 2.00E-15 |
| 1111c | Seq. ID No. 2241 | Seq. ID No. 2242 | membrane | Listeria innocua Bacteria; Firmicutes; Bacillus/Ci... | 2.00E-49 |
| 1127 | Seq. ID No. 2253 | Seq. ID No. 2254 | transporter | ABC transporter ATP-binding protein, Clostridium a... | 7.00E-35 |
| 1135b | Seq. ID No. 2263 | Seq. ID No. 2264 | lipoprotein | putative lipoprotein, Streptomyces coelicolor A3(2... | 5.00E-29 |

TABLE 8: BLASTP

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | Keyword | Description | Blast 'e' Value |
|---------------|-------------------------|-----------------------------|--------------------|---|--------------------|
| 1138 | Seq. ID No. 2269 | Seq. ID No. 2270 | capsular | unknown, Staphylococcus aureus Bacteria; Firmicute... | 9.00E-60 |
| 1140c | Seq. ID No. 2275 | Seq. ID No. 2276 | transport | Listeria innocua Bacteria; Firmicutes; Bacillus/Ci... | 2.00E-85 |
| 1149 | Seq. ID No. 2301 | Seq. ID No. 2302 | transporter | putative ABC- transporter ATP- bind... AL627273... | 1.00E-106 |
| 1152g | Seq. ID No. 2315 | Seq. ID No. 2316 | transporter | dipeptide ABC transporter, permease protei, Helico... | 1.00E-49 |
| 1155g | Seq. ID No. 2329 | Seq. ID No. 2330 | transporter | Staphylococcus aureus subsp. aureus MW2 Bacteria; ... | 3.00E-80 |
| 1158b | Seq. ID No. 2333 | Seq. ID No. 2334 | lipoprotein | RGD-containing lipoprotein, Staphylococcus aureus ... | 2.00E-94 |
| 1165 | Seq. ID No. 2343 | Seq. ID No. 2344 | peptidoglycan | peptidoglycan lytic protein P45, Listeria innocua ... | 1.00E-29 |
| 1166 | Seq. ID No. 2345 | Seq. ID No. 2346 | Response regulator | Response regulator (CheY-like domain, HT, Clostrid... | 1.00E-42 |
| 1171c | Seq. ID No. 2363 | Seq. ID No. 2364 | membrane | ABC-type transmembrane transport protein, Campylob... | 1.00E-20 |
| 1177 | Seq. ID No. 2373 | Seq. ID No. 2374 | capsular | capsular polysaccharide biosynthesi... U67548... | 3.00E-11 |
| 1180e | Seq. ID No. 2391 | Seq. ID No. 2392 | wall | unknown protein, Streptococcus mutans Bacteria; Fi... | 3.00E-66 |
| 1191 | Seq. ID No. 2417 | Seq. ID No. 2418 | transporter | putative ABC transporter (ATP- binding protein), St... | 3.00E-70 |

TABLE 8: BLASTP

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | Keyword | Description | Blast 'e' Value |
|------------|-------------------|-----------------------|--------------------|---|-----------------|
| 1197 | Seq. ID No. 2429 | Seq. ID No. 2430 | Periplasmic | Periplasmic serine proteases (ClpP class), Thermoa... | 2.00E-37 |
| 1214 | Seq. ID No. 2465 | Seq. ID No. 2466 | protease | Listeria innocua Bacteria; Firmicutes; Bacillus/Ci... | 4.00E-35 |
| 1218b | Seq. ID No. 2475 | Seq. ID No. 2476 | protease | glycoprotease family protein, Streptococcus pneumo... | 1.00E-115 |
| 1221b | Seq. ID No. 2483 | Seq. ID No. 2484 | transporter | hypothetical ABC transporter ATP-bindin, Staphyloc... | 1.00E-155 |
| 1233c | Seq. ID No. 2513 | Seq. ID No. 2514 | transporter | putative ATP-binding component of a transpor, Esch... | 6.00E-26 |
| 1237 | Seq. ID No. 2525 | Seq. ID No. 2526 | wall | Yoch, Bacillus subtilis Bacteria; Firmicutes; Baci... | 4.00E-14 |
| 1258d | Seq. ID No. 2589 | Seq. ID No. 2590 | transporter | P-type ATPase - calcium transporter, Streptococcus... | 1.00E-159 |
| 1271 | Seq. ID No. 2613 | Seq. ID No. 2614 | transporter | Mel, Streptococcus pneumoniae Bacteria; Firmicutes... | 4.00E-99 |
| 1288 | Seq. ID No. 2651 | Seq. ID No. 2652 | membrane | membrane bound protein, Bacillus subtilis Bacteria... | 3.00E-42 |
| 1300 | Seq. ID No. 2669 | Seq. ID No. 2670 | transport | secretory protein for transport of ... X65961... | 1.00E-121 |
| 1305c | Seq. ID No. 2677 | Seq. ID No. 2678 | transporter | cell division ABC transporter, ATP-bindin, Strepto... | 7.00E-81 |
| 1308e | Seq. ID No. 2687 | Seq. ID No. 2688 | transporter | cell division ABC transporter, permease protei, St... | 4.00E-47 |
| 1311 | Seq. ID No. 2689 | Seq. ID No. 2690 | response regulator | two-component response regulator involved i, Bacil... | 3.00E-79 |

TABLE 8: BLASTP

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | Keyword | Description | Blast 'e' Value |
|------------|-------------------|-----------------------|---------------|---|-----------------|
| 1315 | Seq. ID No. 2693 | Seq. ID No. 2694 | Membrane | Membrane-associated sensory histi... AE007774... | 1.00E-36 |
| 1319b | Seq. ID No. 2703 | Seq. ID No. 2704 | membrane | ABC transporter membrane-spanning permease, Strep... | 7.00E-90 |
| 1320c | Seq. ID No. 2709 | Seq. ID No. 2710 | transmembrane | phosphate ABC transporter, permease protein, Strep... | 1.00E-78 |
| 1322b | Seq. ID No. 2715 | Seq. ID No. 2716 | transport | Listeria monocytogenes Bacteria; Firmicutes; Bacil... | 1.00E-29 |
| 1344b | Seq. ID No. 2751 | Seq. ID No. 2752 | lipoprotein | putative HPr(ser) kinase, Streptococcus mutans Bac... | 8.00E-79 |
| 1348 | Seq. ID No. 2753 | Seq. ID No. 2754 | lipoprotein | Listeria monocytogenes Bacteria; Firmicutes; Bacil... | 2.00E-66 |
| 1355 | Seq. ID No. 2767 | Seq. ID No. 2768 | Capsular | Capsular polysaccharide of Streptoco... Aar83041... | 1.00E-103 |
| 1366b | Seq. ID No. 2787 | Seq. ID No. 2788 | protease | protease ClpP, Listeria monocytogenes Bacteria; Fi... | 1.00E-81 |
| 1368 | Seq. ID No. 2791 | Seq. ID No. 2792 | receptor | plasmin receptor, Streptococcus pyogenes Bacteria;... | 1.00E-100 |
| 1377 | Seq. ID No. 2803 | Seq. ID No. 2804 | iron | enolase, Spironucleus vortens Euk... AF159517... | 2.00E-66 |
| 1408 | Seq. ID No. 2867 | Seq. ID No. 2868 | transporter | ABC transporter, Lactobacillus plantarum Bacteria;... | 1.00E-116 |
| 1410 | Seq. ID No. 2871 | Seq. ID No. 2872 | transport | bacillus subtilis. hypothetical abc transporter at... | 1.00E-39 |

TABLE 8: BLASTP

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | Keyword | Description | Blast 'e' Value |
|---------------|-------------------------|-----------------------------|----------------|---|--------------------|
| 1426b | Seq. ID No. 2907 | Seq. ID No. 2908 | polysaccharide | Orfde2, Enterococcus faecalis Bacteria; Firmicutes... | 3.00E-24 |
| 1431 | Seq. ID No. 2919 | Seq. ID No. 2920 | transporter | Bacillus subtilis Bacteria; Firmicutes; Bacillus/C... | 1.00E-100 |
| 1432 | Seq. ID No. 2921 | Seq. ID No. 2922 | transporter | predicted membrane components of a, Thermoanaeroba... | 3.00E-38 |
| 1433 | Seq. ID No. 2923 | Seq. ID No. 2924 | immunogenic | Propionibacterium acnes immunogenic ... Aau55208... | 1.00E-111 |
| 1434b | Seq. ID No. 2927 | Seq. ID No. 2928 | iron | Bacillus subtilis Bacteria; Firmicutes; Bacillus/C... | 8.00E-37 |
| 1437c | Seq. ID No. 2933 | Seq. ID No. 2934 | transporter | ABC transporter subunit, Synechocys... D64004... | 1.00E-102 |
| 1442b | Seq. ID No. 2957 | Seq. ID No. 2958 | transporter | ABC transporter (ATP-binding protein), Bacillus ha... | 2.00E-47 |
| 1451 | Seq. ID No. 2979 | Seq. ID No. 2980 | transporter | ABC transporter, ATP-binding protein, Streptococcu... | 1.00E-23 |
| 1457c | Seq. ID No. 2999 | Seq. ID No. 3000 | transporter | Na/Pi cotransporter II-related protein, Streptococ... | 1.00E-118 |
| 1462b | Seq. ID No. 3005 | Seq. ID No. 3006 | transporter | probable ABC transporter (ATP- binding protein), Ye... | 1.00E-111 |
| 1466d | Seq. ID No. 3019 | Seq. ID No. 3020 | membrane | ABC transporter ATP- binding/membrane spannin, Stre... | 1.00E-115 |
| 1470b | Seq. ID No. 3031 | Seq. ID No. 3032 | membrane | Integral membrane protein, Fusobacterium nucleatum... | 2.00E-11 |

TABLE 8: BLASTP

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | Keyword | Description | Blast 'e' Value |
|------------|-------------------|-----------------------|---------------|---|-----------------|
| 1471 | Seq. ID No. 3035 | Seq. ID No. 3036 | channel | potassium channel protein, Methanosarcina acetivor... | 6.00E-20 |
| 1479c | Seq. ID No. 3055 | Seq. ID No. 3056 | wall | Listeria monocytogenes Bacteria; Firmicutes; Bacil... | 2.00E-15 |
| 1484c | Seq. ID No. 3067 | Seq. ID No. 3068 | transporter | magnesium (Mg2+) transporter, Bacillus halodurans ... | 2.00E-65 |
| 1488g | Seq. ID No. 3085 | Seq. ID No. 3086 | transporter | Staphylococcus aureus subsp. aureus N315 Bacteria;... | 2.00E-55 |
| 1530b | Seq. ID No. 3165 | Seq. ID No. 3166 | peptidoglycan | Penicillin-binding protein 1b, Streptococcus pneum... | 1.00E-120 |
| 1543 | Seq. ID No. 3183 | Seq. ID No. 3184 | invasion | extracellular protein, Listeria welshimeri Bacteri... | 2.00E-26 |
| 1547b | Seq. ID No. 3189 | Seq. ID No. 3190 | spore | Bacillus subtilis Bacteria; Firmicutes; Bacillus/C... | 2.00E-71 |
| 1553b | Seq. ID No. 3197 | Seq. ID No. 3198 | transporter | putative ABC transporter subunit ComYA, Streptococ... | 3.00E-55 |
| 1556c | Seq. ID No. 3211 | Seq. ID No. 3212 | transporter | Na+ ABC transporter (ATP-binding protein), NATA, C... | 1.00E-36 |
| 1573 | Seq. ID No. 3251 | Seq. ID No. 3252 | transporter | ABC transporter, ATP-binding protein, Streptococcu... | 2.00E-42 |
| 1577b | Seq. ID No. 3257 | Seq. ID No. 3258 | transport | drug efflux ABC transporter, Streptococcus pneumon... | 7.00E-12 |
| 1578 | Seq. ID No. 3259 | Seq. ID No. 3260 | transport | ABC transporter, Lactobacillus helveticus Bacteria... | 7.00E-34 |

TABLE 8: BLASTP

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | Keyword | Description | Blast 'e' Value |
|---------------|-------------------------|-----------------------------|--------------------|--|--------------------|
| 1594a | Seq. ID No. 3297 | Seq. ID No. 3298 | transmembrane | Chlamydia pneumoniae transmembrane p... Aay35379... | 9.00E-22 |
| 1606b | Seq. ID No. 3319 | Seq. ID No. 3320 | response regulator | putative histidine protein kinase, Lactococcus lac... | 4.00E-69 |
| 1607b | Seq. ID No. 3323 | Seq. ID No. 3324 | lipoprotein | YqjG, Bacillus subtilis Bacteria; Firmicutes; Baci... | 7.00E-30 |
| 1616b | Seq. ID No. 3335 | Seq. ID No. 3336 | sporulation | Staphylococcus aureus subsp. aureus MW2 Bacteria; ... | 1.00E-156 |
| 1619 | Seq. ID No. 3337 | Seq. ID No. 3338 | lipoprotein | CD4+ T cell- stimulating antigen, lipoprotein, List... | 4.00E-81 |
| 1625c | Seq. ID No. 3355 | Seq. ID No. 3356 | transport | putative sugar ABC transporter (permeas, Streptoco... | 3.00E-76 |
| 1626b | Seq. ID No. 3359 | Seq. ID No. 3360 | membrane | sugar ABC transporter, permease protein, Streptoco... | 7.00E-97 |
| 1634c | Seq. ID No. 3377 | Seq. ID No. 3378 | peptidoglycan | beta-1,4-N- acetylmuramoylhydr olase, Enterococcus h... | 4.00E-34 |
| 1646e | Seq. ID No. 3397 | Seq. ID No. 3398 | polysaccharide | putative polysaccharide biosynthesis protein, Stre... | 3.00E-78 |
| 1649a | Seq. ID No. 3405 | Seq. ID No. 3406 | penicillin | Streptococcus thermophilus Bacteria; Firmicutes; G... | 7.00E-35 |
| 1654 | Seq. ID No. 3415 | Seq. ID No. 3416 | immunogenic | Propionibacterium acnes immunogenic ... Aau49489... | 8.00E-24 |
| 1659c | Seq. ID No. 3425 | Seq. ID No. 3426 | membrane | putative integral membrane protein, Campylobacter ... | 2.00E-93 |

TABLE 8: BLASTP

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | Keyword | Description | Blast 'e' Value |
|------------|-------------------|-----------------------|----------------|---|-----------------|
| 1660b | Seq. ID No. 3427 | Seq. ID No. 3428 | membrane | putative integral membrane protein, <i>Campylobacter</i> ... | 1.00E-24 |
| 1674 | Seq. ID No. 3461 | Seq. ID No. 3462 | membrane | putative integral membrane protein, <i>Campylobacter</i> ... | 9.00E-15 |
| 1675a | Seq. ID No. 3463 | Seq. ID No. 3464 | immunogenic | <i>Propionibacterium acnes</i> immunogenic ... Aau47623... | 3.00E-24 |
| 1685 | Seq. ID No. 3487 | Seq. ID No. 3488 | immunogenic | <i>Propionibacterium acnes</i> immunogenic ... Aau58232... | 2.00E-50 |
| 1688b | Seq. ID No. 3493 | Seq. ID No. 3494 | polysaccharide | Orfde3, <i>Enterococcus faecalis</i> Bacteria; Firmicutes... | 5.00E-87 |
| 1689a | Seq. ID No. 3497 | Seq. ID No. 3498 | cps7H | putative glycosyltransferase Cps7H, <i>Streptococcus</i> ... | 5.00E-38 |
| 1691 | Seq. ID No. 3507 | Seq. ID No. 3508 | membrane | Hypothetical membrane-spanning protein, <i>Fusobacter</i> ... | 6.00E-12 |
| 1694d | Seq. ID No. 3519 | Seq. ID No. 3520 | membrane | membrane bound protein, <i>Bacillus subtilis</i> Bacteria... | 1.00E-68 |
| 1696 | Seq. ID No. 3521 | Seq. ID No. 3522 | transport | UDP-Glc-6-dehydrogenase Ugd, <i>Escherichia coli</i> Bact... | 1.00E-155 |
| 1699b | Seq. ID No. 3529 | Seq. ID No. 3530 | transport | probable export protein, <i>Escherichia coli</i> K12 Bact... | 4.00E-28 |
| 1701a | Seq. ID No. 3535 | Seq. ID No. 3536 | immunogenic | <i>Propionibacterium acnes</i> immunogenic ... Aau67497... | 4.00E-34 |
| 1752b | Seq. ID No. 3629 | Seq. ID No. 3630 | surface | streptococcal surface protein, <i>Streptococcus dysga</i> ... | 7.00E-14 |

TABLE 8: BLASTP

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | Keyword | Description | Blast 'e' Value |
|------------|-------------------|-----------------------|----------------|---|-----------------|
| 1756b | Seq. ID No. 3635 | Seq. ID No. 3636 | membrane | hypothetical membrane protein LaaO, Lactobacillus ... | 1.00E-31 |
| 1798c | Seq. ID No. 3727 | Seq. ID No. 3728 | membrane | Uncharacterized membrane protein, homolog o, Clost... | 1.00E-13 |
| 1808d | Seq. ID No. 3759 | Seq. ID No. 3760 | membrane | mbh8 NADH dehydrogenase subunit - integra, Pyrococ... | 7.00E-43 |
| 1809f | Seq. ID No. 3771 | Seq. ID No. 3772 | membrane | mbh8 NADH dehydrogenase subunit - integra, Pyrococ... | 2.00E-48 |
| 1816a | Seq. ID No. 3793 | Seq. ID No. 3794 | peptidoglycan | Penicillin-binding protein 1A, Streptococcus pneum... | 1.00E-124 |
| 1838b | Seq. ID No. 3839 | Seq. ID No. 3840 | transport | ABC-type multidrug/protein/lipi d transpor, Thermoa... | 6.00E-57 |
| 1842b | Seq. ID No. 3851 | Seq. ID No. 3852 | protease | sac operon related regulation protein, Bacillus sp... | 1.00E-22 |
| 1845c | Seq. ID No. 3863 | Seq. ID No. 3864 | channel | voltage-gated chloride channel family protein, Str... | 4.00E-63 |
| 1848a | Seq. ID No. 3865 | Seq. ID No. 3866 | membrane | Integral membrane protein, Fusobacterium nucleatum... | 6.00E-24 |
| 1855 | Seq. ID No. 3883 | Seq. ID No. 3884 | capsule | Regulatory function on capsule ex... AE008458... | 1.00E-13 |
| 1857c | Seq. ID No. 3891 | Seq. ID No. 3892 | polysaccharide | Staphylococcus aureus subsp. aureus N315 Bacteria;... | 7.00E-15 |
| 1865b | Seq. ID No. 3913 | Seq. ID No. 3914 | membrane | Listeria innocua Bacteria; Firmicutes; Bacillus/Ci... | 2.00E-40 |

TABLE 8: BLASTP

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | Keyword | Description | Blast 'e' Value |
|------------|-------------------|-----------------------|---------------|--|-----------------|
| 1873c | Seq. ID No. 3925 | Seq. ID No. 3926 | protease | OrfRM1, Bacillus subtilis Bacteria; Firmicutes; GE... ref NP_655047.1 (NC_003995) | 8.00E-91 |
| 1875c | Seq. ID No. 3929 | Seq. ID No. 3930 | Signal | Peptidase_S26, Signal... | 1.00E-32 |
| 1898b | Seq. ID No. 3975 | Seq. ID No. 3976 | membrane | Hypothetical membrane-spanning protein, Fusobacter... | 6.00E-32 |
| 1902a | Seq. ID No. 3981 | Seq. ID No. 3982 | capsular | DNA topoisomerase IV subunit B, Streptococcus agal... | 0 |
| 1931b | Seq. ID No. 4027 | Seq. ID No. 4028 | transport | transporter protein, Haemophilus influenzae Rd Bac... | 3.00E-22 |
| 1936 | Seq. ID No. 4039 | Seq. ID No. 4040 | transport | Bacillus subtilis Bacteria; Firmicutes; Bacillus/C... | 2.00E-18 |
| 1941b | Seq. ID No. 4061 | Seq. ID No. 4062 | Membrane | Membrane associated histidine kinase-lik, Clostrid... | 6.00E-18 |
| 1946b | Seq. ID No. 4073 | Seq. ID No. 4074 | transport | probable amino acid transport protein, Clostridium... | 2.00E-56 |
| 1951a | Seq. ID No. 4081 | Seq. ID No. 4082 | membrane | ABC-type multidrug/protein/lipid transport, Clostri... | 1.00E-137 |
| 1958b | Seq. ID No. 4103 | Seq. ID No. 4104 | membrane | ABC transporter membrane-spanning permease, Strep... | 8.00E-44 |
| 1960c | Seq. ID No. 4111 | Seq. ID No. 4112 | transport | ABC transporter substrate-binding protein, Strept... | 3.00E-68 |
| 1973 | Seq. ID No. 4137 | Seq. ID No. 4138 | peptidoglycan | peptidoglycan N-acetylglucosamine deacetylase A, S... | 1.00E-15 |
| 2016c | Seq. ID No. 4225 | Seq. ID No. 4226 | transport | Listeria monocytogenes Bacteria; Firmicutes; Bacil... | 2.00E-20 |

TABLE 8: BLASTP

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | Keyword | Description | Blast 'e' Value |
|------------|-------------------|-----------------------|--------------------|---|-----------------|
| 2024b | Seq. ID No. 4247 | Seq. ID No. 4248 | penicillin | Listeria monocytogenes Bacteria; Firmicutes; Bacil... | 1.00E-132 |
| 2074b | Seq. ID No. 4343 | Seq. ID No. 4344 | wall | Bacillus subtilis Bacteria; Firmicutes; Bacillus/C... | 2.00E-26 |
| 2092 | Seq. ID No. 4379 | Seq. ID No. 4380 | response regulator | Hpk1, Streptococcus thermophilus Bacteria; Firmicu... | 2.00E-22 |
| 2096c | Seq. ID No. 4389 | Seq. ID No. 4390 | transport | Staphylococcus aureus subsp. aureus MW2 Bacteria; ... | 1.00E-61 |
| 2140a | Seq. ID No. 4469 | Seq. ID No. 4470 | protease | Listeria innocua Bacteria; Firmicutes; Bacillus/Ci... | 6.00E-55 |
| 2142a | Seq. ID No. 4473 | Seq. ID No. 4474 | phosphatidate | putative phosphatidate cytidyltransferase, Strept... | 1.00E-11 |
| 2146 | Seq. ID No. 4481 | Seq. ID No. 4482 | lipoprotein | Listeria innocua Bacteria; Firmicutes; Bacillus/Ci... | 1.00E-68 |
| 2147b | Seq. ID No. 4485 | Seq. ID No. 4486 | transport | Listeria monocytogenes Bacteria; Firmicutes; Bacil... | 5.00E-41 |
| 2150a | Seq. ID No. 4493 | Seq. ID No. 4494 | immunogenic | Propionibacterium acnes immunogenic protein #18988... | 9.00E-15 |
| 2161c | Seq. ID No. 4529 | Seq. ID No. 4530 | immunogenic | Propionibacterium acnes immunogenic protein #20073... | 5.00E-12 |
| 2219c | Seq. ID No. 4643 | Seq. ID No. 4644 | membrane | Conserved membrane protein, probabl, Clostridium a... | 4.00E-20 |
| 2249 | Seq. ID No. 4705 | Seq. ID No. 4706 | transport | oligopeptide ABC transporte, Bacillus halodurans B... | 1.00E-148 |

TABLE 8: BLASTP

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | Keyword | Description | Blast 'e' Value |
|------------|-------------------|-----------------------|-------------|--|-----------------|
| 2253d | Seq. ID No. 4713 | Seq. ID No. 4714 | transport | oligopeptide ABC transporter (permease), Bacillus ... | 1.00E-60 |
| 2255b | Seq. ID No. 4717 | Seq. ID No. 4718 | transport | oligopeptide ABC transporter (permease), Bacillus ... | 8.00E-93 |
| 2300 | Seq. ID No. 4813 | Seq. ID No. 4814 | transport | H ⁺ -transporting ATP synthase, subunit K (atpK), Me... | 2.00E-18 |
| 2301 | Seq. ID No. 4815 | Seq. ID No. 4816 | transport | H ⁺ -transporting ATP synthase, subunit I (atpI), Py... | 3.00E-43 |
| 2307 | Seq. ID No. 4825 | Seq. ID No. 4826 | membrane | membrane permease OpuCD, Listeria monocytogenes Ba... | 1.00E-55 |
| 2308 | Seq. ID No. 4827 | Seq. ID No. 4828 | transport | Listeria innocua Bacteria; Firmicutes; Bacillus/Ci... | 5.00E-81 |
| 2309c | Seq. ID No. 4833 | Seq. ID No. 4834 | transport | membrane permease OpuCB, Listeria monocytogenes Ba... | 9.00E-33 |
| 2311 | Seq. ID No. 4837 | Seq. ID No. 4838 | transport | glycine betaine/carnitine/cho line AB, Staphylococc... | 1.00E-109 |
| 2317 | Seq. ID No. 4851 | Seq. ID No. 4852 | immunogenic | Propionibacterium acnes immunogenic protein #7465.... | 9.00E-17 |
| 2324 | Seq. ID No. 4863 | Seq. ID No. 4864 | immunogenic | Propionibacterium acnes immunogenic protein #5020.... | 5.00E-18 |
| 2329d | Seq. ID No. 4875 | Seq. ID No. 4876 | membrane | Listeria innocua Bacteria; Firmicutes; Bacillus/Ci... | 2.00E-72 |
| 2331 | Seq. ID No. 4879 | Seq. ID No. 4880 | membrane | Listeria monocytogenes Bacteria; Firmicutes; Bacil... | 1.00E-28 |

TABLE 8: BLASTP

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | Keyword | Description | Blast 'e' Value |
|------------|-------------------|-----------------------|----------------|---|-----------------|
| 2338c | Seq. ID No. 4893 | Seq. ID No. 4894 | membrane | predicted membrane GTPase involved in stres, Therm... | 1.00E-178 |
| 2344 | Seq. ID No. 4901 | Seq. ID No. 4902 | membrane | dihydrolipoamide dehydrogenase component o, Staphy... | 1.00E-167 |
| 2357 | Seq. ID No. 4919 | Seq. ID No. 4920 | sensor protein | sensor protein kinase, Lactococcus lactis subsp. l... | 1.00E-47 |
| 2363b | Seq. ID No. 4931 | Seq. ID No. 4932 | periplasmic | predicted periplasmic solute-binding protein, Ther... | 4.00E-45 |
| 2376 | Seq. ID No. 4959 | Seq. ID No. 4960 | virulence | aspartate semialdehyde dehydrogenase, Staphylococc... | 1.00E-117 |
| 2377b | Seq. ID No. 4963 | Seq. ID No. 4964 | virulence | Staphylococcus aureus mutant P14C15 virulence gene... | 2.00E-87 |
| 2387 | Seq. ID No. 4985 | Seq. ID No. 4986 | Transport | Transporter, Fusobacterium nucleatum subsp. nuclea... | 9.00E-40 |
| 2452 | Seq. ID No. 5113 | Seq. ID No. 5114 | sporulation | alanine dehydrogenase, Bacillus subtilis Bacteria;... | 1.00E-118 |
| 2453 | Seq. ID No. 5115 | Seq. ID No. 5116 | ferric | Bacillus subtilis Bacteria; Firmicutes; Bacillus/C... | 5.00E-48 |
| 2455 | Seq. ID No. 5117 | Seq. ID No. 5118 | ferric | Bacillus subtilis Bacteria; Firmicutes; Bacillus/C... | 2.00E-76 |
| 2456d | Seq. ID No. 5125 | Seq. ID No. 5126 | transport | Bacillus subtilis Bacteria; Firmicutes; Bacillus/C... | 2.00E-54 |
| 2458g | Seq. ID No. 5141 | Seq. ID No. 5142 | transporter | ferrichrome ABC transporter (permease), Bacillus h... | 2.00E-65 |

TABLE 8: BLASTP

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | Keyword | Description | Blast 'e' Value |
|------------|-------------------|-----------------------|------------------|--|-----------------|
| | | | | Human secreted protein sequence | |
| 2475c | Seq. ID No. 5183 | Seq. ID No. 5184 | secreted protein | enco... Aab34842... | 1.00E-109 |
| 2485 | Seq. ID No. 5201 | Seq. ID No. 5202 | wall | cell division protein, Enterococcus faecalis Bacte... | 1.00E-114 |
| 2490 | Seq. ID No. 5205 | Seq. ID No. 5206 | wall | cell division protein, Enterococcus faecalis Bacte... | 5.00E-22 |
| 2495a | Seq. ID No. 5213 | Seq. ID No. 5214 | penicillin | MRAY, Staphylococcus aureus Bacteria; Firmicutes; ... | 6.00E-64 |
| 2497b | Seq. ID No. 5219 | Seq. ID No. 5220 | wall | penicillin-binding protein, Enterococcus faecalis ... | 1.00E-116 |
| 2520d | Seq. ID No. 5279 | Seq. ID No. 5280 | phosphatase | phosphoenolpyruvat e-protein phosphatase, Staphyloc... | 0 |
| 2525a | Seq. ID No. 5285 | Seq. ID No. 5286 | virulence | Amino acid sequence of a virulence factor encoded ... | 3.00E-11 |
| 2547c | Seq. ID No. 5331 | Seq. ID No. 5332 | immunogenic | Propionibacterium acnes immunogenic protein #22248... | 2.00E-14 |
| 2564d | Seq. ID No. 5381 | Seq. ID No. 5382 | transport | carboxypeptidase, Bacillus subtilis Bacteria; Firm... | 1.00E-42 |
| 2568 | Seq. ID No. 5389 | Seq. ID No. 5390 | transport | ABC-type multidrug transport system, ATPas, Thermo... | 2.00E-47 |
| 2582a | Seq. ID No. 5405 | Seq. ID No. 5406 | membrane | ABC transporter membrane-spanning permease, Strep... | 9.00E-66 |
| 2585 | Seq. ID No. 5411 | Seq. ID No. 5412 | transport | ABC transporter ATP-binding protein - cobal, Strep... | 1.00E-148 |

TABLE 8: BLASTP

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | Keyword | Description | Blast 'e' Value |
|------------|-------------------|-----------------------|---------------|---|-----------------|
| 2589 | Seq. ID No. 5419 | Seq. ID No. 5420 | lipoprotein | Chlamydia trachomatis lipoprotein se... Aay37627... | 1.00E-120 |
| 2596 | Seq. ID No. 5433 | Seq. ID No. 5434 | immunogenic | Propionibacterium acnes immunogenic protein #4493.... | 2.00E-27 |
| 2616c | Seq. ID No. 5463 | Seq. ID No. 5464 | membrane | Listeria innocua Bacteria; Firmicutes; Bacillus/Ci... | 1.00E-10 |
| 2617b | Seq. ID No. 5477 | Seq. ID No. 5478 | transport | putative ABC transporter (ATP-binding protein), St... | 9.00E-69 |
| 2623b | Seq. ID No. 5491 | Seq. ID No. 5492 | wall | Lactococcus lactis subsp. cremoris Bacteria; Firmi... | 2.00E-23 |
| 2628 | Seq. ID No. 5509 | Seq. ID No. 5510 | transport | Pseudogene, similar to glycine-betaine bindin, Lis... | 2.00E-77 |
| 2629b | Seq. ID No. 5513 | Seq. ID No. 5514 | transport | oligopeptide ABC transporte, Bacillus halodurans B... | 1.00E-149 |
| 2633d | Seq. ID No. 5525 | Seq. ID No. 5526 | transport | oligopeptide ABC transporte, Bacillus halodurans B... | 1.00E-149 |
| 2637a | Seq. ID No. 5529 | Seq. ID No. 5530 | transport | oligopeptide ABC transporte, Bacillus halodurans B... | 1.00E-140 |
| 2643b | Seq. ID No. 5537 | Seq. ID No. 5538 | peptidoglycan | Penicillin-binding protein 2a, Streptococcus pneum... | 1.00E-143 |
| 2659b | Seq. ID No. 5567 | Seq. ID No. 5568 | hemolysin | putative hemolysin, Streptococcus pyogenes MGAS823... | 5.00E-71 |
| 2674b | Seq. ID No. 5599 | Seq. ID No. 5600 | membrane | putative integral membrane protei... AL162756... | 5.00E-21 |
| 2680c | Seq. ID No. 5621 | Seq. ID No. 5622 | virulence | Staphylococcus aureus mutant P11C12 virulence gene... | 1.00E-160 |

TABLE 8: BLASTP

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | Keyword | Description | Blast 'e' Value |
|------------|-------------------|-----------------------|--------------------|--|-----------------|
| 2688c | Seq. ID No. 5637 | Seq. ID No. 5638 | transport | phosphotidylglycero phosphate synthase, Streptococc... | 4.00E-43 |
| 2723 | Seq. ID No. 5699 | Seq. ID No. 5700 | membrane | Uncharacterized membrane protein, homolog o, Clostr... | 1.00E-13 |
| 2734c | Seq. ID No. 5723 | Seq. ID No. 5724 | transport | cation transporter, Lactococcus lactis subsp. lact... | 9.00E-62 |
| 2738c | Seq. ID No. 5733 | Seq. ID No. 5734 | transport | transporter, Bacillus halodurans Bacteria; Firmicu... | 3.00E-21 |
| 2748c | Seq. ID No. 5761 | Seq. ID No. 5762 | transport | conserved hypothetical protein, Thermotoga maritim... | 5.00E-34 |
| 2758d | Seq. ID No. 5791 | Seq. ID No. 5792 | immunogenic | Propionibacterium acnes immunogenic ... Aau49434... | 3.00E-36 |
| 2801b | Seq. ID No. 5895 | Seq. ID No. 5896 | response regulator | VanSB, Enterococcus faecalis Bacteria; Firmicutes;... | 1.00E-21 |
| 2805b | Seq. ID No. 5901 | Seq. ID No. 5902 | transmembrane | transmembrane protein Vexp3, Streptococcus pneumon... | 1.00E-130 |
| 2809 | Seq. ID No. 5903 | Seq. ID No. 5904 | transport | ABC transporter, ATP-binding protein Vexp2, Strept... | 1.00E-63 |
| 2810c | Seq. ID No. 5909 | Seq. ID No. 5910 | membrane | ABC transporter membrane-spanning permease - Pe, S... | 1.00E-59 |
| 2812 | Seq. ID No. 5913 | Seq. ID No. 5914 | transport | probable ABC transporter, Clostridium perfringens ... | 1.00E-102 |
| 2816 | Seq. ID No. 5919 | Seq. ID No. 5920 | transport | Listeria innocua Bacteria; Firmicutes; Bacillus/Ci... | 5.00E-59 |
| 2818e | Seq. ID No. 5929 | Seq. ID No. 5930 | transport | amino acid ABC transporter permease protein, Lacto... | 2.00E-58 |

TABLE 8: BLASTP

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | Keyword | Description | Blast 'e' Value |
|------------|-------------------|-----------------------|--------------------|--|-----------------|
| 2822a | Seq. ID No. 5939 | Seq. ID No. 5940 | membrane | putative membrane protein, Salmonella enterica sub... | 7.00E-27 |
| 2856c | Seq. ID No. 6001 | Seq. ID No. 6002 | transport | heavy-metal transporting CPx-type ATPase, Methanot... | 1.00E-131 |
| 2881 | Seq. ID No. 6043 | Seq. ID No. 6044 | surface | surface protein (GW repeat) similar t, Listeria in... | 4.00E-23 |
| 2883d | Seq. ID No. 6053 | Seq. ID No. 6054 | transport | ABC transporter permease protein, Lactococcus lact... | 1.00E-107 |
| 2886b | Seq. ID No. 6057 | Seq. ID No. 6058 | transport | Listeria monocytogenes Bacteria; Firmicutes; Bacil... | 5.00E-69 |
| 2900b | Seq. ID No. 6089 | Seq. ID No. 6090 | wall | YojL, Bacillus subtilis Bacteria; Firmicutes; Baci... | 2.00E-15 |
| 2902 | Seq. ID No. 6095 | Seq. ID No. 6096 | peptidoglycan | beta-1,4-N-acetylmuramoylhydr olase, Enterococcus h... | 2.00E-32 |
| 2906 | Seq. ID No. 6103 | Seq. ID No. 6104 | immunoglobulin | Streptococcus sp. G148 Bacteria; Firmicutes; Bacil... | 2.00E-17 |
| 2909d | Seq. ID No. 6111 | Seq. ID No. 6112 | transmembrane | Listeria innocua Bacteria; Firmicutes; Bacillus/Ci... | 1.00E-144 |
| 2913b | Seq. ID No. 6117 | Seq. ID No. 6118 | response regulator | putative histidine kinase, Lactobacillus sakei Bac... | 1.00E-92 |
| 2931c | Seq. ID No. 6165 | Seq. ID No. 6166 | transport | putative sodium/glucose cotransporter, Salmonella ... | 8.00E-96 |
| 2933b | Seq. ID No. 6169 | Seq. ID No. 6170 | immunogenic | Propionibacterium acnes immunogenic protein #6411.... | 1.00E-19 |
| 2941b | Seq. ID No. 6185 | Seq. ID No. 6186 | transport | probable ABC transporter, Clostridium perfringens ... | 1.00E-145 |

TABLE 8: BLASTP

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | Keyword | Description | Blast 'e' Value |
|---------------|-------------------------|-----------------------------|-------------|--|--------------------|
| 2943b | Seq. ID No. 6191 | Seq. ID No. 6192 | transport | ABC transporter ATP binding protein, Lactococcus l... | 1.00E-114 |
| 2948d | Seq. ID No. 6209 | Seq. ID No. 6210 | membrane | Listeria innocua Bacteria; Firmicutes; Bacillus/Ci... | 4.00E-56 |
| 2955e | Seq. ID No. 6229 | Seq. ID No. 6230 | membrane | putative integral membrane transporter protein, Si... | 4.00E-35 |
| 2965c | Seq. ID No. 6257 | Seq. ID No. 6258 | hemolysin | hemolysin, Treponema denticola Bact... U30249... | 1E-55 |
| 2969 | Seq. ID No. 6263 | Seq. ID No. 6264 | Membrane | Membrane-fusion protein, Thermoanaerobacter tengco... | 5.00E-23 |
| 2971b | Seq. ID No. 6271 | Seq. ID No. 6272 | lipoprotein | ABC-type transport systems, involved i, Thermoanae... | 5.00E-72 |
| 2974b | Seq. ID No. 6275 | Seq. ID No. 6276 | lipoprotein | ABC-type transport systems, involved i, Thermoanae... | 4.00E-61 |
| 2980a | Seq. ID No. 6289 | Seq. ID No. 6290 | transport | unknown, Pasteurella multocida Bacteria; Proteobac... | 5.00E-13 |
| 2986b | Seq. ID No. 6303 | Seq. ID No. 6304 | transport | rnfD protein, Pseudomonas stutzeri A15 Bacteria; P... | 3.00E-28 |
| 3016b | Seq. ID No. 6365 | Seq. ID No. 6366 | membrane | ABC transporter membrane-spanning permease - Na, S... | 3.00E-27 |
| 3017 | Seq. ID No. 6369 | Seq. ID No. 6370 | transporter | ABC transporter ATP binding protein, Lactococcus l... | 6.00E-82 |
| 3024a | Seq. ID No. 6383 | Seq. ID No. 6384 | virulence | Amino acid sequence of a virulence factor encoded ... | 2.00E-13 |

TABLE 8: BLASTP

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | Keyword | Description | Blast 'e' Value |
|------------|-------------------|-----------------------|-------------|---|-----------------|
| | Seq. ID No. | Seq. ID No. | | putative host cell surface-exposed lipoprotein, St... | |
| 3037a | 6415 | 6416 | lipoprotein | | 8.00E-13 |

Listed in Table 9 are 242 ORFs that share some homology with the ORFs predicted by proteomic methods used for studying surface exposed proteins of *Streptococcus pneumoniae*.

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TABLE 9: PROTEOMICS

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number |
|------------|-------------------|-----------------------|
| 1 | Seq. ID No. 1 | Seq. ID No. 2 |
| 2b | Seq. ID No. 5 | Seq. ID No. 6 |
| 56b | Seq. ID No. 93 | Seq. ID No. 94 |
| 57a | Seq. ID No. 95 | Seq. ID No. 96 |
| 60b | Seq. ID No. 103 | Seq. ID No. 104 |
| 62a | Seq. ID No. 107 | Seq. ID No. 108 |
| 85c | Seq. ID No. 157 | Seq. ID No. 158 |
| 112b | Seq. ID No. 223 | Seq. ID No. 224 |
| 114 | Seq. ID No. 225 | Seq. ID No. 226 |
| 121 | Seq. ID No. 233 | Seq. ID No. 234 |
| 124c | Seq. ID No. 239 | Seq. ID No. 240 |
| 129c | Seq. ID No. 253 | Seq. ID No. 254 |
| 157b | Seq. ID No. 317 | Seq. ID No. 318 |
| 158b | Seq. ID No. 321 | Seq. ID No. 322 |
| 165a | Seq. ID No. 341 | Seq. ID No. 342 |
| 167 | Seq. ID No. 345 | Seq. ID No. 346 |
| 171b | Seq. ID No. 353 | Seq. ID No. 354 |
| 175 | Seq. ID No. 361 | Seq. ID No. 362 |
| 176 | Seq. ID No. 363 | Seq. ID No. 364 |
| 177a | Seq. ID No. 365 | Seq. ID No. 366 |

TABLE 9: PROTEOMICS

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number |
|------------|-------------------|-----------------------|
| 180b | Seq. ID No. 375 | Seq. ID No. 376 |
| 184 | Seq. ID No. 379 | Seq. ID No. 380 |
| 186 | Seq. ID No. 383 | Seq. ID No. 384 |
| 188 | Seq. ID No. 389 | Seq. ID No. 390 |
| 189b | Seq. ID No. 391 | Seq. ID No. 392 |
| 192b | Seq. ID No. 397 | Seq. ID No. 398 |
| 195 | Seq. ID No. 405 | Seq. ID No. 406 |
| 197a | Seq. ID No. 409 | Seq. ID No. 410 |
| 198b | Seq. ID No. 415 | Seq. ID No. 416 |
| 203 | Seq. ID No. 423 | Seq. ID No. 424 |
| 204 | Seq. ID No. 425 | Seq. ID No. 426 |
| 205 | Seq. ID No. 427 | Seq. ID No. 428 |
| 206 | Seq. ID No. 429 | Seq. ID No. 430 |
| 208b | Seq. ID No. 435 | Seq. ID No. 436 |
| 210 | Seq. ID No. 437 | Seq. ID No. 438 |
| 211 | Seq. ID No. 439 | Seq. ID No. 440 |
| 213 | Seq. ID No. 441 | Seq. ID No. 442 |
| 215a | Seq. ID No. 443 | Seq. ID No. 444 |
| 218 | Seq. ID No. 445 | Seq. ID No. 446 |
| 219 | Seq. ID No. 447 | Seq. ID No. 448 |
| 220a | Seq. ID No. 449 | Seq. ID No. 450 |
| 226b | Seq. ID No. 461 | Seq. ID No. 462 |
| 227 | Seq. ID No. 463 | Seq. ID No. 464 |
| 228a | Seq. ID No. 465 | Seq. ID No. 466 |
| 249a | Seq. ID No. 513 | Seq. ID No. 514 |
| 262 | Seq. ID No. 543 | Seq. ID No. 544 |
| 265 | Seq. ID No. 551 | Seq. ID No. 552 |
| 267b | Seq. ID No. 553 | Seq. ID No. 554 |
| 269a | Seq. ID No. 559 | Seq. ID No. 560 |

TABLE 9: PROTEOMICS

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number |
|------------|-------------------|-----------------------|
| 284a | Seq. ID No. 595 | Seq. ID No. 596 |
| 286a | Seq. ID No. 601 | Seq. ID No. 602 |
| 311 | Seq. ID No. 637 | Seq. ID No. 638 |
| 315 | Seq. ID No. 649 | Seq. ID No. 650 |
| 318a | Seq. ID No. 657 | Seq. ID No. 658 |
| 321 | Seq. ID No. 669 | Seq. ID No. 670 |
| 324 | Seq. ID No. 675 | Seq. ID No. 676 |
| 329 | Seq. ID No. 683 | Seq. ID No. 684 |
| 351 | Seq. ID No. 753 | Seq. ID No. 754 |
| 429b | Seq. ID No. 929 | Seq. ID No. 930 |
| 450a | Seq. ID No. 969 | Seq. ID No. 970 |
| 473 | Seq. ID No. 1041 | Seq. ID No. 1042 |
| 474 | Seq. ID No. 1043 | Seq. ID No. 1044 |
| 498a | Seq. ID No. 1085 | Seq. ID No. 1086 |
| 499a | Seq. ID No. 1089 | Seq. ID No. 1090 |
| 500 | Seq. ID No. 1093 | Seq. ID No. 1094 |
| 502c | Seq. ID No. 1097 | Seq. ID No. 1098 |
| 504 | Seq. ID No. 1099 | Seq. ID No. 1100 |
| 505a | Seq. ID No. 1101 | Seq. ID No. 1102 |
| 543a | Seq. ID No. 1175 | Seq. ID No. 1176 |
| 551 | Seq. ID No. 1205 | Seq. ID No. 1206 |
| 570b | Seq. ID No. 1237 | Seq. ID No. 1238 |
| 687 | Seq. ID No. 1459 | Seq. ID No. 1460 |
| 709 | Seq. ID No. 1495 | Seq. ID No. 1496 |
| 710 | Seq. ID No. 1497 | Seq. ID No. 1498 |
| 715a | Seq. ID No. 1503 | Seq. ID No. 1504 |
| 722c | Seq. ID No. 1517 | Seq. ID No. 1518 |
| 726 | Seq. ID No. 1527 | Seq. ID No. 1528 |
| 728b | Seq. ID No. 1531 | Seq. ID No. 1532 |

TABLE 9: PROTEOMICS

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number |
|------------|-------------------|-----------------------|
| 730d | Seq. ID No. 1539 | Seq. ID No. 1540 |
| 732 | Seq. ID No. 1543 | Seq. ID No. 1544 |
| 738c | Seq. ID No. 1549 | Seq. ID No. 1550 |
| 747 | Seq. ID No. 1573 | Seq. ID No. 1574 |
| 792 | Seq. ID No. 1657 | Seq. ID No. 1658 |
| 829a | Seq. ID No. 1709 | Seq. ID No. 1710 |
| 859b | Seq. ID No. 1767 | Seq. ID No. 1768 |
| 866b | Seq. ID No. 1785 | Seq. ID No. 1786 |
| 886 | Seq. ID No. 1821 | Seq. ID No. 1822 |
| 938 | Seq. ID No. 1889 | Seq. ID No. 1890 |
| 954 | Seq. ID No. 1925 | Seq. ID No. 1926 |
| 977a | Seq. ID No. 1969 | Seq. ID No. 1970 |
| 992 | Seq. ID No. 2003 | Seq. ID No. 2004 |
| 1016c | Seq. ID No. 2047 | Seq. ID No. 2048 |
| 1033a | Seq. ID No. 2075 | Seq. ID No. 2076 |
| 1036b | Seq. ID No. 2089 | Seq. ID No. 2090 |
| 1037 | Seq. ID No. 2093 | Seq. ID No. 2094 |
| 1049a | Seq. ID No. 2117 | Seq. ID No. 2118 |
| 1058 | Seq. ID No. 2137 | Seq. ID No. 2138 |
| 1062 | Seq. ID No. 2143 | Seq. ID No. 2144 |
| 1094a | Seq. ID No. 2205 | Seq. ID No. 2206 |
| 1108b | Seq. ID No. 2235 | Seq. ID No. 2236 |
| 1131 | Seq. ID No. 2257 | Seq. ID No. 2258 |
| 1149 | Seq. ID No. 2301 | Seq. ID No. 2302 |
| 1171c | Seq. ID No. 2363 | Seq. ID No. 2364 |
| 1194 | Seq. ID No. 2423 | Seq. ID No. 2424 |
| 1205 | Seq. ID No. 2445 | Seq. ID No. 2446 |
| 1208 | Seq. ID No. 2451 | Seq. ID No. 2452 |
| 1221a | Seq. ID No. 2481 | Seq. ID No. 2482 |

TABLE 9: PROTEOMICS

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number |
|------------|-------------------|-----------------------|
| 1226 | Seq. ID No. 2495 | Seq. ID No. 2496 |
| 1230 | Seq. ID No. 2505 | Seq. ID No. 2506 |
| 1256 | Seq. ID No. 2577 | Seq. ID No. 2578 |
| 1258c | Seq. ID No. 2587 | Seq. ID No. 2588 |
| 1271 | Seq. ID No. 2613 | Seq. ID No. 2614 |
| 1281 | Seq. ID No. 2633 | Seq. ID No. 2634 |
| 1288 | Seq. ID No. 2651 | Seq. ID No. 2652 |
| 1297a | Seq. ID No. 2665 | Seq. ID No. 2666 |
| 1300 | Seq. ID No. 2669 | Seq. ID No. 2670 |
| 1305c | Seq. ID No. 2677 | Seq. ID No. 2678 |
| 1308e | Seq. ID No. 2687 | Seq. ID No. 2688 |
| 1315 | Seq. ID No. 2693 | Seq. ID No. 2694 |
| 1318 | Seq. ID No. 2699 | Seq. ID No. 2700 |
| 1321 | Seq. ID No. 2711 | Seq. ID No. 2712 |
| 1322b | Seq. ID No. 2715 | Seq. ID No. 2716 |
| 1349b | Seq. ID No. 2757 | Seq. ID No. 2758 |
| 1368 | Seq. ID No. 2791 | Seq. ID No. 2792 |
| 1371 | Seq. ID No. 2793 | Seq. ID No. 2794 |
| 1377 | Seq. ID No. 2803 | Seq. ID No. 2804 |
| 1408 | Seq. ID No. 2867 | Seq. ID No. 2868 |
| 1431 | Seq. ID No. 2919 | Seq. ID No. 2920 |
| 1437a | Seq. ID No. 2929 | Seq. ID No. 2930 |
| 1462b | Seq. ID No. 3005 | Seq. ID No. 3006 |
| 1466d | Seq. ID No. 3019 | Seq. ID No. 3020 |
| 1508 | Seq. ID No. 3125 | Seq. ID No. 3126 |
| 1512 | Seq. ID No. 3137 | Seq. ID No. 3138 |
| 1528 | Seq. ID No. 3161 | Seq. ID No. 3162 |
| 1537 | Seq. ID No. 3179 | Seq. ID No. 3180 |
| 1573 | Seq. ID No. 3251 | Seq. ID No. 3252 |

TABLE 9: PROTEOMICS

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number |
|------------|-------------------|-----------------------|
| 1578 | Seq. ID No. 3259 | Seq. ID No. 3260 |
| 1588 | Seq. ID No. 3285 | Seq. ID No. 3286 |
| 1600a | Seq. ID No. 3309 | Seq. ID No. 3310 |
| 1606a | Seq. ID No. 3317 | Seq. ID No. 3318 |
| 1619 | Seq. ID No. 3337 | Seq. ID No. 3338 |
| 1623b | Seq. ID No. 3345 | Seq. ID No. 3346 |
| 1626b | Seq. ID No. 3359 | Seq. ID No. 3360 |
| 1680 | Seq. ID No. 3475 | Seq. ID No. 3476 |
| 1694b | Seq. ID No. 3515 | Seq. ID No. 3516 |
| 1696 | Seq. ID No. 3521 | Seq. ID No. 3522 |
| 1759 | Seq. ID No. 3641 | Seq. ID No. 3642 |
| 1788c | Seq. ID No. 3695 | Seq. ID No. 3696 |
| 1816a | Seq. ID No. 3793 | Seq. ID No. 3794 |
| 1861b | Seq. ID No. 3901 | Seq. ID No. 3902 |
| 1875b | Seq. ID No. 3927 | Seq. ID No. 3928 |
| 1912 | Seq. ID No. 3987 | Seq. ID No. 3988 |
| 1918c | Seq. ID No. 4001 | Seq. ID No. 4002 |
| 1940 | Seq. ID No. 4057 | Seq. ID No. 4058 |
| 1951a | Seq. ID No. 4081 | Seq. ID No. 4082 |
| 1960c | Seq. ID No. 4111 | Seq. ID No. 4112 |
| 1967 | Seq. ID No. 4125 | Seq. ID No. 4126 |
| 1996 | Seq. ID No. 4193 | Seq. ID No. 4194 |
| 2000 | Seq. ID No. 4195 | Seq. ID No. 4196 |
| 2020 | Seq. ID No. 4237 | Seq. ID No. 4238 |
| 2024b | Seq. ID No. 4247 | Seq. ID No. 4248 |
| 2094 | Seq. ID No. 4383 | Seq. ID No. 4384 |
| 2097 | Seq. ID No. 4393 | Seq. ID No. 4394 |
| 2100 | Seq. ID No. 4397 | Seq. ID No. 4398 |
| 2104 | Seq. ID No. 4401 | Seq. ID No. 4402 |

TABLE 9: PROTEOMICS

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number |
|------------|-------------------|-----------------------|
| 2117 | Seq. ID No. 4435 | Seq. ID No. 4436 |
| 2125a | Seq. ID No. 4449 | Seq. ID No. 4450 |
| 2140b | Seq. ID No. 4471 | Seq. ID No. 4472 |
| 2149b | Seq. ID No. 4491 | Seq. ID No. 4492 |
| 2156c | Seq. ID No. 4511 | Seq. ID No. 4512 |
| 2160b | Seq. ID No. 4519 | Seq. ID No. 4520 |
| 2164 | Seq. ID No. 4531 | Seq. ID No. 4532 |
| 2174 | Seq. ID No. 4549 | Seq. ID No. 4550 |
| 2185 | Seq. ID No. 4577 | Seq. ID No. 4578 |
| 2186b | Seq. ID No. 4581 | Seq. ID No. 4582 |
| 2189b | Seq. ID No. 4585 | Seq. ID No. 4586 |
| 2203 | Seq. ID No. 4609 | Seq. ID No. 4610 |
| 2204 | Seq. ID No. 4611 | Seq. ID No. 4612 |
| 2206a | Seq. ID No. 4613 | Seq. ID No. 4614 |
| 2234a | Seq. ID No. 4675 | Seq. ID No. 4676 |
| 2238 | Seq. ID No. 4685 | Seq. ID No. 4686 |
| 2256 | Seq. ID No. 4719 | Seq. ID No. 4720 |
| 2260c | Seq. ID No. 4729 | Seq. ID No. 4730 |
| 2269 | Seq. ID No. 4743 | Seq. ID No. 4744 |
| 2275b | Seq. ID No. 4755 | Seq. ID No. 4756 |
| 2284 | Seq. ID No. 4781 | Seq. ID No. 4782 |
| 2286b | Seq. ID No. 4787 | Seq. ID No. 4788 |
| 2311 | Seq. ID No. 4837 | Seq. ID No. 4838 |
| 2312b | Seq. ID No. 4841 | Seq. ID No. 4842 |
| 2316 | Seq. ID No. 4849 | Seq. ID No. 4850 |
| 2321a | Seq. ID No. 4855 | Seq. ID No. 4856 |
| 2338a | Seq. ID No. 4889 | Seq. ID No. 4890 |
| 2344 | Seq. ID No. 4901 | Seq. ID No. 4902 |
| 2353 | Seq. ID No. 4915 | Seq. ID No. 4916 |

TABLE 9: PROTEOMICS

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number |
|------------|-------------------|-----------------------|
| 2354 | Seq. ID No. 4917 | Seq. ID No. 4918 |
| 2363b | Seq. ID No. 4931 | Seq. ID No. 4932 |
| 2365b | Seq. ID No. 4935 | Seq. ID No. 4936 |
| 2384a | Seq. ID No. 4977 | Seq. ID No. 4978 |
| 2409a | Seq. ID No. 5025 | Seq. ID No. 5026 |
| 2410 | Seq. ID No. 5029 | Seq. ID No. 5030 |
| 2449b | Seq. ID No. 5109 | Seq. ID No. 5110 |
| 2453 | Seq. ID No. 5115 | Seq. ID No. 5116 |
| 2455 | Seq. ID No. 5117 | Seq. ID No. 5118 |
| 2465a | Seq. ID No. 5155 | Seq. ID No. 5156 |
| 2477 | Seq. ID No. 5185 | Seq. ID No. 5186 |
| 2485 | Seq. ID No. 5201 | Seq. ID No. 5202 |
| 2489 | Seq. ID No. 5203 | Seq. ID No. 5204 |
| 2497b | Seq. ID No. 5219 | Seq. ID No. 5220 |
| 2516b | Seq. ID No. 5261 | Seq. ID No. 5262 |
| 2527a | Seq. ID No. 5289 | Seq. ID No. 5290 |
| 2528b | Seq. ID No. 5295 | Seq. ID No. 5296 |
| 2564b | Seq. ID No. 5377 | Seq. ID No. 5378 |
| 2568 | Seq. ID No. 5389 | Seq. ID No. 5390 |
| 2578 | Seq. ID No. 5399 | Seq. ID No. 5400 |
| 2585 | Seq. ID No. 5411 | Seq. ID No. 5412 |
| 2643b | Seq. ID No. 5537 | Seq. ID No. 5538 |
| 2680c | Seq. ID No. 5621 | Seq. ID No. 5622 |
| 2684a | Seq. ID No. 5627 | Seq. ID No. 5628 |
| 2695 | Seq. ID No. 5657 | Seq. ID No. 5658 |
| 2716a | Seq. ID No. 5675 | Seq. ID No. 5676 |
| 2732 | Seq. ID No. 5717 | Seq. ID No. 5718 |
| 2752 | Seq. ID No. 5777 | Seq. ID No. 5778 |
| 2785b | Seq. ID No. 5859 | Seq. ID No. 5860 |

TABLE 9: PROTEOMICS

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number |
|-------------------|--------------------------|------------------------------|
| 2805b | Seq. ID No. 5901 | Seq. ID No. 5902 |
| 2812 | Seq. ID No. 5913 | Seq. ID No. 5914 |
| 2816 | Seq. ID No. 5919 | Seq. ID No. 5920 |
| 2818c | Seq. ID No. 5925 | Seq. ID No. 5926 |
| 2820 | Seq. ID No. 5933 | Seq. ID No. 5934 |
| 2886a | Seq. ID No. 6055 | Seq. ID No. 6056 |
| 2918 | Seq. ID No. 6129 | Seq. ID No. 6130 |
| 2921 | Seq. ID No. 6133 | Seq. ID No. 6134 |
| 2941c | Seq. ID No. 6187 | Seq. ID No. 6188 |
| 2943c | Seq. ID No. 6193 | Seq. ID No. 6194 |
| 2954 | Seq. ID No. 6219 | Seq. ID No. 6220 |
| 2971b | Seq. ID No. 6271 | Seq. ID No. 6272 |
| 2975 | Seq. ID No. 6277 | Seq. ID No. 6278 |
| 3017 | Seq. ID No. 6369 | Seq. ID No. 6370 |
| 3020 | Seq. ID No. 6375 | Seq. ID No. 6376 |
| 3022 | Seq. ID No. 6379 | Seq. ID No. 6380 |
| 3026b | Seq. ID No. 6389 | Seq. ID No. 6390 |
| 3118b | Seq. ID No. 6591 | Seq. ID No. 6592 |
| 3121 | Seq. ID No. 6605 | Seq. ID No. 6606 |

Listed in Table 10 are 22 ORFs predicted to be covalently bound to the peptidoglycan region via the 'LPXTG' motif. These ORFs were found using the HMM LPXTG motif finder and are classified as proteins that might be targeted by sortase. The

5 Applicants developed a HMM using approximately 70 known prokaryotic polypeptides containing the LPXTG cell wall sorting signal. This HMM was used to predict cell wall polypeptides that are anchored to the peptidoglycan layer.

TABLE 10: LPXTG MOTIF

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number |
|-------------------|--------------------------|------------------------------|
| 246a | Seq. ID No. 503 | Seq. ID No. 504 |
| 246b | Seq. ID No. 505 | Seq. ID No. 506 |
| 609a | Seq. ID No. 1315 | Seq. ID No. 1316 |
| 609b | Seq. ID No. 1317 | Seq. ID No. 1318 |
| 631a | Seq. ID No. 1363 | Seq. ID No. 1364 |
| 631b | Seq. ID No. 1365 | Seq. ID No. 1366 |
| 631c | Seq. ID No. 1367 | Seq. ID No. 1368 |
| 631d | Seq. ID No. 1369 | Seq. ID No. 1370 |
| 743a | Seq. ID No. 1559 | Seq. ID No. 1560 |
| 743b | Seq. ID No. 1561 | Seq. ID No. 1562 |
| 751 | Seq. ID No. 1581 | Seq. ID No. 1582 |
| 847a | Seq. ID No. 1739 | Seq. ID No. 1740 |
| 847b | Seq. ID No. 1741 | Seq. ID No. 1742 |
| 1381a | Seq. ID No. 2811 | Seq. ID No. 2812 |
| 1381b | Seq. ID No. 2813 | Seq. ID No. 2814 |
| 1747 | Seq. ID No. 3619 | Seq. ID No. 3620 |
| 2669a | Seq. ID No. 5587 | Seq. ID No. 5588 |
| 2669b | Seq. ID No. 5589 | Seq. ID No. 5590 |
| 2669c | Seq. ID No. 5591 | Seq. ID No. 5592 |
| 2757a | Seq. ID No. 5781 | Seq. ID No. 5782 |
| 2757b | Seq. ID No. 5783 | Seq. ID No. 5784 |
| 2906 | Seq. ID No. 6103 | Seq. ID No. 6104 |

Listed in Table 11 are 71 ORFs predicted to be lipoproteins based on the HMM Lipo program.

TABLE 11: LIPOPROTEIN

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number |
|-------------------|--------------------------|------------------------------|
| 38a | Seq. ID No. 45 | Seq. ID No. 46 |
| 38b | Seq. ID No. 47 | Seq. ID No. 48 |
| 91a | Seq. ID No. 171 | Seq. ID No. 172 |
| 114 | Seq. ID No. 225 | Seq. ID No. 226 |
| 201a | Seq. ID No. 419 | Seq. ID No. 420 |
| 249a | Seq. ID No. 513 | Seq. ID No. 514 |
| 277c | Seq. ID No. 575 | Seq. ID No. 576 |
| 283a | Seq. ID No. 591 | Seq. ID No. 592 |
| 283b | Seq. ID No. 593 | Seq. ID No. 594 |
| 318a | Seq. ID No. 657 | Seq. ID No. 658 |
| 318b | Seq. ID No. 659 | Seq. ID No. 660 |
| 321 | Seq. ID No. 669 | Seq. ID No. 670 |
| 324 | Seq. ID No. 675 | Seq. ID No. 676 |
| 349b | Seq. ID No. 745 | Seq. ID No. 746 |
| 349c | Seq. ID No. 747 | Seq. ID No. 748 |
| 431 | Seq. ID No. 935 | Seq. ID No. 936 |
| 476 | Seq. ID No. 1045 | Seq. ID No. 1046 |
| 492 | Seq. ID No. 1075 | Seq. ID No. 1076 |
| 524b | Seq. ID No. 1137 | Seq. ID No. 1138 |
| 542 | Seq. ID No. 1173 | Seq. ID No. 1174 |
| 546b | Seq. ID No. 1191 | Seq. ID No. 1192 |
| 546c | Seq. ID No. 1193 | Seq. ID No. 1194 |
| 547a | Seq. ID No. 1195 | Seq. ID No. 1196 |
| 744 | Seq. ID No. 1563 | Seq. ID No. 1564 |
| 794b | Seq. ID No. 1661 | Seq. ID No. 1662 |
| 794c | Seq. ID No. 1663 | Seq. ID No. 1664 |
| 794d | Seq. ID No. 1665 | Seq. ID No. 1666 |

TABLE 11: LIPOPROTEIN

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number |
|-------------------|--------------------------|------------------------------|
| 870 | Seq. ID No. 1791 | Seq. ID No. 1792 |
| 873c | Seq. ID No. 1797 | Seq. ID No. 1798 |
| 951a | Seq. ID No. 1917 | Seq. ID No. 1918 |
| 977a | Seq. ID No. 1969 | Seq. ID No. 1970 |
| 1047b | Seq. ID No. 2115 | Seq. ID No. 2116 |
| 1067 | Seq. ID No. 2159 | Seq. ID No. 2160 |
| 1197 | Seq. ID No. 2429 | Seq. ID No. 2430 |
| 1239 | Seq. ID No. 2527 | Seq. ID No. 2528 |
| 1318 | Seq. ID No. 2699 | Seq. ID No. 2700 |
| 1382 | Seq. ID No. 2815 | Seq. ID No. 2816 |
| 1411b | Seq. ID No. 2875 | Seq. ID No. 2876 |
| 1449a | Seq. ID No. 2975 | Seq. ID No. 2976 |
| 1449b | Seq. ID No. 2977 | Seq. ID No. 2978 |
| 1455b | Seq. ID No. 2991 | Seq. ID No. 2992 |
| 1475 | Seq. ID No. 3043 | Seq. ID No. 3044 |
| 1607b | Seq. ID No. 3323 | Seq. ID No. 3324 |
| 1619 | Seq. ID No. 3337 | Seq. ID No. 3338 |
| 1970b | Seq. ID No. 4133 | Seq. ID No. 4134 |
| 1973 | Seq. ID No. 4137 | Seq. ID No. 4138 |
| 2146 | Seq. ID No. 4481 | Seq. ID No. 4482 |
| 2249 | Seq. ID No. 4705 | Seq. ID No. 4706 |
| 2308 | Seq. ID No. 4827 | Seq. ID No. 4828 |
| 2329a | Seq. ID No. 4869 | Seq. ID No. 4870 |
| 2453 | Seq. ID No. 5115 | Seq. ID No. 5116 |
| 2564b | Seq. ID No. 5377 | Seq. ID No. 5378 |
| 2564c | Seq. ID No. 5379 | Seq. ID No. 5380 |
| 2623b | Seq. ID No. 5491 | Seq. ID No. 5492 |
| 2628 | Seq. ID No. 5509 | Seq. ID No. 5510 |
| 2629b | Seq. ID No. 5513 | Seq. ID No. 5514 |

TABLE 11: LIPOPROTEIN

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number |
|-------------------|--------------------------|------------------------------|
| 2633d | Seq. ID No. 5525 | Seq. ID No. 5526 |
| 2637a | Seq. ID No. 5529 | Seq. ID No. 5530 |
| 2637b | Seq. ID No. 5531 | Seq. ID No. 5532 |
| 2799a | Seq. ID No. 5889 | Seq. ID No. 5890 |
| 2810c | Seq. ID No. 5909 | Seq. ID No. 5910 |
| 2869b | Seq. ID No. 6025 | Seq. ID No. 6026 |
| 2869c | Seq. ID No. 6027 | Seq. ID No. 6028 |
| 2900a | Seq. ID No. 6087 | Seq. ID No. 6088 |
| 2900b | Seq. ID No. 6089 | Seq. ID No. 6090 |
| 2993a | Seq. ID No. 6325 | Seq. ID No. 6326 |
| 2993b | Seq. ID No. 6327 | Seq. ID No. 6328 |
| 3037a | Seq. ID No. 6415 | Seq. ID No. 6416 |
| 3145b | Seq. ID No. 6637 | Seq. ID No. 6638 |
| 3145c | Seq. ID No. 6639 | Seq. ID No. 6640 |
| 3147c | Seq. ID No. 6645 | Seq. ID No. 6646 |

Listed in Table 12 are ORFs encoding polypeptides predicted to be noncovalently bound to the peptidoglycan layer based on the HMM program. Four ORFs were identified that were predicted to encode proteins that bound peptidoglycans noncovalently.

TABLE 12: PEPTIDOGLYCAN BINDING

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number |
|-------------------|--------------------------|------------------------------|
| 1733 | Seq. ID No. 3589 | Seq. ID No. 3590 |
| 1912 | Seq. ID No. 3987 | Seq. ID No. 3988 |
| 2497b | Seq. ID No. 5219 | Seq. ID No. 5220 |
| 2549 | Seq. ID No. 5337 | Seq. ID No. 5338 |

Also contemplated in the present invention are other important characteristics of *Alloiooccus otitidis* ORFs. For example, the *Alloiooccus otitidis* ORFs were searched

to identify any that encode polypeptides with RGD motifs. Proteins that contain the Arg-Gly-Asp (RGD) attachment motif, together with integrins that serve as their receptor, constitute a major recognition system for cell adhesion, and thus are putative *Alloiococcus otitidis* polypeptide antigens. RGD recognition is one mechanism used by microbes to gain entry into eukaryotic tissues (Stockbauer *et al.*, 1999; Isberg and Nhieu, 1994). However, not all RGD-containing proteins mediate cell attachment. It has been shown that RGD-containing peptides with a proline at the carboxy end (RGDP) are inactive in cell attachment assays (Pierschbacher and Rouslahti, 1987) and were excluded from consideration.

Listed in Table 13 are 125 ORFs found to contain the peptide sequence 'RGDX' where X is not proline. These ORFs are predicted to be surface localized and may interact with eukaryotic extracellular proteins.

TABLE 13: RGD MOTIF

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number |
|------------|-------------------|-----------------------|
| 24 | Seq. ID No. 37 | Seq. ID No. 38 |
| 58 | Seq. ID No. 99 | Seq. ID No. 100 |
| 62a | Seq. ID No. 107 | Seq. ID No. 108 |
| 62b | Seq. ID No. 109 | Seq. ID No. 110 |
| 62c | Seq. ID No. 111 | Seq. ID No. 112 |
| 171a | Seq. ID No. 351 | Seq. ID No. 352 |
| 171b | Seq. ID No. 353 | Seq. ID No. 354 |
| 228a | Seq. ID No. 465 | Seq. ID No. 466 |
| 228b | Seq. ID No. 467 | Seq. ID No. 468 |
| 228c | Seq. ID No. 469 | Seq. ID No. 470 |
| 228d | Seq. ID No. 471 | Seq. ID No. 472 |
| 329 | Seq. ID No. 683 | Seq. ID No. 684 |
| 383a | Seq. ID No. 821 | Seq. ID No. 822 |
| 383b | Seq. ID No. 823 | Seq. ID No. 824 |
| 467a | Seq. ID No. 1021 | Seq. ID No. 1022 |
| 467b | Seq. ID No. 1023 | Seq. ID No. 1024 |
| 535 | Seq. ID No. 1157 | Seq. ID No. 1158 |
| 536 | Seq. ID No. 1159 | Seq. ID No. 1160 |

TABLE 13: RGD MOTIF

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number |
|------------|-------------------|-----------------------|
| 569 | Seq. ID No. 1233 | Seq. ID No. 1234 |
| 614a | Seq. ID No. 1333 | Seq. ID No. 1334 |
| 614b | Seq. ID No. 1335 | Seq. ID No. 1336 |
| 680 | Seq. ID No. 1449 | Seq. ID No. 1450 |
| 743a | Seq. ID No. 1559 | Seq. ID No. 1560 |
| 743b | Seq. ID No. 1561 | Seq. ID No. 1562 |
| 744 | Seq. ID No. 1563 | Seq. ID No. 1564 |
| 774 | Seq. ID No. 1625 | Seq. ID No. 1626 |
| 863 | Seq. ID No. 1777 | Seq. ID No. 1778 |
| 890a | Seq. ID No. 1827 | Seq. ID No. 1828 |
| 890b | Seq. ID No. 1829 | Seq. ID No. 1830 |
| 929b | Seq. ID No. 1871 | Seq. ID No. 1872 |
| 954 | Seq. ID No. 1925 | Seq. ID No. 1926 |
| 1057 | Seq. ID No. 2135 | Seq. ID No. 2136 |
| 1063 | Seq. ID No. 2145 | Seq. ID No. 2146 |
| 1077b | Seq. ID No. 2173 | Seq. ID No. 2174 |
| 1077c | Seq. ID No. 2175 | Seq. ID No. 2176 |
| 1077d | Seq. ID No. 2177 | Seq. ID No. 2178 |
| 1077e | Seq. ID No. 2179 | Seq. ID No. 2180 |
| 1132 | Seq. ID No. 2259 | Seq. ID No. 2260 |
| 1155a | Seq. ID No. 2317 | Seq. ID No. 2318 |
| 1155b | Seq. ID No. 2319 | Seq. ID No. 2320 |
| 1155c | Seq. ID No. 2321 | Seq. ID No. 2322 |
| 1155d | Seq. ID No. 2323 | Seq. ID No. 2324 |
| 1155e | Seq. ID No. 2325 | Seq. ID No. 2326 |
| 1155f | Seq. ID No. 2327 | Seq. ID No. 2328 |
| 1155g | Seq. ID No. 2329 | Seq. ID No. 2330 |
| 1184 | Seq. ID No. 2401 | Seq. ID No. 2402 |
| 1302 | Seq. ID No. 2671 | Seq. ID No. 2672 |
| 1405 | Seq. ID No. 2863 | Seq. ID No. 2864 |

TABLE 13: RGD MOTIF

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number |
|------------|-------------------|-----------------------|
| 1409 | Seq. ID No. 2869 | Seq. ID No. 2870 |
| 1431 | Seq. ID No. 2919 | Seq. ID No. 2920 |
| 1432 | Seq. ID No. 2921 | Seq. ID No. 2922 |
| 1456 | Seq. ID No. 2993 | Seq. ID No. 2994 |
| 1489 | Seq. ID No. 3087 | Seq. ID No. 3088 |
| 1512 | Seq. ID No. 3137 | Seq. ID No. 3138 |
| 1587a | Seq. ID No. 3279 | Seq. ID No. 3280 |
| 1587b | Seq. ID No. 3281 | Seq. ID No. 3282 |
| 1587c | Seq. ID No. 3283 | Seq. ID No. 3284 |
| 1616a | Seq. ID No. 3333 | Seq. ID No. 3334 |
| 1616b | Seq. ID No. 3335 | Seq. ID No. 3336 |
| 1689a | Seq. ID No. 3497 | Seq. ID No. 3498 |
| 1689b | Seq. ID No. 3499 | Seq. ID No. 3500 |
| 1689c | Seq. ID No. 3501 | Seq. ID No. 3502 |
| 1700b | Seq. ID No. 3533 | Seq. ID No. 3534 |
| 1775a | Seq. ID No. 3671 | Seq. ID No. 3672 |
| 1775b | Seq. ID No. 3673 | Seq. ID No. 3674 |
| 1775c | Seq. ID No. 3675 | Seq. ID No. 3676 |
| 1838a | Seq. ID No. 3837 | Seq. ID No. 3838 |
| 1838b | Seq. ID No. 3839 | Seq. ID No. 3840 |
| 1838c | Seq. ID No. 3841 | Seq. ID No. 3842 |
| 1838d | Seq. ID No. 3843 | Seq. ID No. 3844 |
| 1875c | Seq. ID No. 3929 | Seq. ID No. 3930 |
| 1895 | Seq. ID No. 3961 | Seq. ID No. 3962 |
| 1934 | Seq. ID No. 4037 | Seq. ID No. 4038 |
| 1996 | Seq. ID No. 4193 | Seq. ID No. 4194 |
| 2021 | Seq. ID No. 4239 | Seq. ID No. 4240 |
| 2065a | Seq. ID No. 4327 | Seq. ID No. 4328 |
| 2065b | Seq. ID No. 4329 | Seq. ID No. 4330 |
| 2068 | Seq. ID No. 4333 | Seq. ID No. 4334 |

TABLE 13: RGD MOTIF

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number |
|-------------------|--------------------------|------------------------------|
| 2097 | Seq. ID No. 4393 | Seq. ID No. 4394 |
| 2138a | Seq. ID No. 4463 | Seq. ID No. 4464 |
| 2138b | Seq. ID No. 4465 | Seq. ID No. 4466 |
| 2138c | Seq. ID No. 4467 | Seq. ID No. 4468 |
| 2196 | Seq. ID No. 4597 | Seq. ID No. 4598 |
| 2215a | Seq. ID No. 4629 | Seq. ID No. 4630 |
| 2215b | Seq. ID No. 4631 | Seq. ID No. 4632 |
| 2234a | Seq. ID No. 4675 | Seq. ID No. 4676 |
| 2234b | Seq. ID No. 4677 | Seq. ID No. 4678 |
| 2234c | Seq. ID No. 4679 | Seq. ID No. 4680 |
| 2240a | Seq. ID No. 4689 | Seq. ID No. 4690 |
| 2240b | Seq. ID No. 4691 | Seq. ID No. 4692 |
| 2240c | Seq. ID No. 4693 | Seq. ID No. 4694 |
| 2284 | Seq. ID No. 4781 | Seq. ID No. 4782 |
| 2292a | Seq. ID No. 4799 | Seq. ID No. 4800 |
| 2292b | Seq. ID No. 4801 | Seq. ID No. 4802 |
| 2292c | Seq. ID No. 4803 | Seq. ID No. 4804 |
| 2322 | Seq. ID No. 4861 | Seq. ID No. 4862 |
| 2401 | Seq. ID No. 5009 | Seq. ID No. 5010 |
| 2461a | Seq. ID No. 5143 | Seq. ID No. 5144 |
| 2461b | Seq. ID No. 5145 | Seq. ID No. 5146 |
| 2475a | Seq. ID No. 5179 | Seq. ID No. 5180 |
| 2475b | Seq. ID No. 5181 | Seq. ID No. 5182 |
| 2475c | Seq. ID No. 5183 | Seq. ID No. 5184 |
| 2513a | Seq. ID No. 5249 | Seq. ID No. 5250 |
| 2513b | Seq. ID No. 5251 | Seq. ID No. 5252 |
| 2513c | Seq. ID No. 5253 | Seq. ID No. 5254 |
| 2516a | Seq. ID No. 5259 | Seq. ID No. 5260 |
| 2516b | Seq. ID No. 5261 | Seq. ID No. 5262 |
| 2528a | Seq. ID No. 5293 | Seq. ID No. 5294 |

TABLE 13: RGD MOTIF

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number |
|-------------------|--------------------------|------------------------------|
| 2528b | Seq. ID No. 5295 | Seq. ID No. 5296 |
| 2528c | Seq. ID No. 5297 | Seq. ID No. 5298 |
| 2528d | Seq. ID No. 5299 | Seq. ID No. 5300 |
| 2535a | Seq. ID No. 5307 | Seq. ID No. 5308 |
| 2535b | Seq. ID No. 5309 | Seq. ID No. 5310 |
| 2585 | Seq. ID No. 5411 | Seq. ID No. 5412 |
| 2643a | Seq. ID No. 5535 | Seq. ID No. 5536 |
| 2643b | Seq. ID No. 5537 | Seq. ID No. 5538 |
| 2744 | Seq. ID No. 5745 | Seq. ID No. 5746 |
| 2768a | Seq. ID No. 5821 | Seq. ID No. 5822 |
| 2768b | Seq. ID No. 5823 | Seq. ID No. 5824 |
| 2768c | Seq. ID No. 5825 | Seq. ID No. 5826 |
| 2871 | Seq. ID No. 6029 | Seq. ID No. 6030 |
| 2934 | Seq. ID No. 6171 | Seq. ID No. 6172 |
| 2988a | Seq. ID No. 6307 | Seq. ID No. 6308 |
| 2988b | Seq. ID No. 6309 | Seq. ID No. 6310 |
| 2988c | Seq. ID No. 6311 | Seq. ID No. 6312 |

Listed in Table 14 are the 39 ORFs whose BlastP results predict for possible capsule biosynthesis and transport. Keywords used in the search are: polysaccharide, saccharide, rhamnos, dexB, aliA, cap[A-Z], cps[A-Z], wze[A-Z], wzh[A-Z], teichu, tuaG, manB, pyrophosphorylase, glucose, eps[ABE], glucosyl, xylos, encapsula, pgs[ABC], exopolysacch, galactos, epimerase, lytR, lytABC, lysR, Transferase, GalNAc, GlcNAc, Spore, LPS, Peptidoglycan, Glutamate, Mannos, Oligosaccharide, Outer core, Arabinose, Teichoic, Teicho, Lipoteichoic, Glycerol, spo[A-Z], capsule, capsular.

TABLE 14: CAPSULE RELATED PROTEINS

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | Keyword | Description | Blast 'e' Value |
|------------|-------------------|-----------------------|-------------|---|-----------------|
| 39a | Seq. ID No. 49 | Seq. ID No. 50 | capC | capsule biosynthesis protein CapC, (pXO2-57), Baci... | 6.00E-19 |
| 39b | Seq. ID No. 51 | Seq. ID No. 52 | capC | capsule biosynthesis protein CapC, (pXO2-57), Baci... | 7.00E-19 |
| 40 | Seq. ID No. 53 | Seq. ID No. 54 | capB | CapB, Bacillus subtilis Bacteria; Firmicutes; Baci... | 9.00E-95 |
| 41c | Seq. ID No. 59 | Seq. ID No. 60 | capA | PgsA, Bacillus subtilis Bacteria; Firmicutes; Baci... | 9.00E-95 |
| 102 | Seq. ID No. 195 | Seq. ID No. 196 | saccharide | Bacillus cereus Bacteria; Firmicutes; Bacillus/Clo... | 1.00E-168 |
| 330c | Seq. ID No. 689 | Seq. ID No. 690 | transferase | Glycosyltransferase, Clostridium acetobutylicum Ba... | 5.00E-79 |
| 337 | Seq. ID No. 703 | Seq. ID No. 704 | transferase | glycosyltransferase, Lactococcus lactis subsp. lac... | 2.00E-58 |
| 427c | Seq. ID No. 925 | Seq. ID No. 926 | capsular | unknown, Staphylococcus aureus Bacteria; Firmicute... | 2.00E-46 |
| 760 | Seq. ID No. 1597 | Seq. ID No. 1598 | dexB | maturase-related protein, Streptococcus pneumoniae... | 6.00E-78 |
| 762b | Seq. ID No. 1601 | Seq. ID No. 1602 | cpsL | transposase, Streptococcus pneumoniae Bacteria; Fi... | 1.00E-46 |
| 763b | Seq. ID No. 1607 | Seq. ID No. 1608 | capsular | transposase, Staphylococcus aureus Bacteria; Firmi... | 5.00E-44 |
| 766 | Seq. ID No. 1611 | Seq. ID No. 1612 | cpsL | transposase, Streptococcus pneumoniae Bacteria; Fi... | 6.00E-44 |
| 767 | Seq. ID No. 1613 | Seq. ID No. 1614 | capsular | transposase, Staphylococcus aureus Bacteria; Firmi... | 4.00E-16 |
| 830 | Seq. ID No. 1713 | Seq. ID No. 1714 | cpsA | Thermostable carboxypeptidase (cpsA-2), Sulfolobus... | 4.00E-14 |

TABLE 14: CAPSULE RELATED PROTEINS

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | Keyword | Description | Blast 'e' Value |
|------------|-------------------|-----------------------|-----------------|---|-----------------|
| 1004a | Seq. ID No. 2029 | Seq. ID No. 2030 | EpsE | unknown, Lactobacillus rhamnosus Bacteria; Firmicu... | 1.00E-168 |
| 1135b | Seq. ID No. 2263 | Seq. ID No. 2264 | capA | Bacillus anthracis Bacteria; Firmicutes; Bacillus/... | 3.00E-25 |
| 1138 | Seq. ID No. 2269 | Seq. ID No. 2270 | saccharide | unknown, Staphylococcus aureus Bacteria; Firmicute... | 9.00E-60 |
| 1177 | Seq. ID No. 2373 | Seq. ID No. 2374 | capsular | capsular polysaccharide biosynthesi... U67548... | 9.00E-60 |
| 1200 | Seq. ID No. 2437 | Seq. ID No. 2438 | xylos | acetylxylosidase, Caldicellulosiruptor saccharolyt... | 9.00E-36 |
| 1288 | Seq. ID No. 2651 | Seq. ID No. 2652 | lytR | membrane bound protein, Bacillus subtilis Bacteria... | 3.00E-42 |
| 1355 | Seq. ID No. 2767 | Seq. ID No. 2768 | manB | probable phosphomannomutase, Clostridium perfringe... | 1.00E-136 |
| 1426b | Seq. ID No. 2907 | Seq. ID No. 2908 | polysacch aride | Orfde2, Enterococcus faecalis Bacteria; Firmicutes... | 1.00E-103 |
| 1646e | Seq. ID No. 3397 | Seq. ID No. 3398 | polysacch aride | putative polysaccharide biosynthesis protein, Stre... | 3.00E-24 |
| 1646f | Seq. ID No. 3399 | Seq. ID No. 3400 | polysacch aride | putative polysaccharide biosynthesis protein, Stre... | 3.00E-78 |
| 1682b | Seq. ID No. 3479 | Seq. ID No. 3480 | polysacch aride | methionine aminopeptidase A, Enterococcus faecalis... | 2.00E-68 |
| 1685 | Seq. ID No. 3487 | Seq. ID No. 3488 | glucose | UDP-glucose 4-epimerase, Streptococcus pneumoniae ... | 1.00E-111 |
| 1688a | Seq. ID No. 3491 | Seq. ID No. 3492 | polysacch aride | Orfde3, Enterococcus faecalis Bacteria; Firmicutes... | 3.00E-78 |
| 1688b | Seq. ID No. 3493 | Seq. ID No. 3494 | polysacch aride | Orfde3, Enterococcus faecalis Bacteria; Firmicutes... | 9.00E-34 |

TABLE 14: CAPSULE RELATED PROTEINS

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | Keyword | Description | Blast 'e' Value |
|------------|-------------------|-----------------------|----------------|---|-----------------|
| 1688c | Seq. ID No. 3495 | Seq. ID No. 3496 | transferase | RgpG, <i>Lactobacillus delbrueckii</i> Bacteria; Firmicut... | 4.00E-99 |
| 1689a | Seq. ID No. 3497 | Seq. ID No. 3498 | tuaG | teichuronic acid biosynthesis, <i>Bacillus halodurans</i> ... | 9.00E-53 |
| 1694d | Seq. ID No. 3519 | Seq. ID No. 3520 | lytR | attenuator for <i>lytABC</i> and <i>lytR</i> expression, <i>Bacillu</i> ... | 6.00E-69 |
| 1696 | Seq. ID No. 3521 | Seq. ID No. 3522 | glucose | putative UDP-glucose dehydrogenase, <i>Escherichia co</i> ... | 1.00E-157 |
| 1699b | Seq. ID No. 3529 | Seq. ID No. 3530 | teichu | unknown, <i>Bacillus subtilis</i> Bacteria; Firmicutes; G... | 8.00E-30 |
| 1701a | Seq. ID No. 3535 | Seq. ID No. 3536 | mannos | alpha-D-mannose-alpha(1-6)phospha... AP001516... | 1.00E-84 |
| 1710b | Seq. ID No. 3561 | Seq. ID No. 3562 | LPS | LPS biosynthesis protein RfaE, Ps... AE004912... | 4.00E-12 |
| 1855 | Seq. ID No. 3883 | Seq. ID No. 3884 | capsule | Regulatory function on capsule ex... AE008458... | 5.00E-38 |
| 1857c | Seq. ID No. 3891 | Seq. ID No. 3892 | polysaccharide | <i>Staphylococcus aureus</i> subsp. <i>aureus</i> N315 Bacteria;... | 1.00E-13 |
| 1902a | Seq. ID No. 3981 | Seq. ID No. 3982 | capsular | DNA topoisomerase IV subunit B, <i>Streptococcus agal</i> ... | 7.00E-15 |
| 1951d | Seq. ID No. 4087 | Seq. ID No. 4088 | saccharide | Phospholipid-lipopolysaccharide A... AE010571... | 7.00E-84 |

Three potential capsule loci have been identified based on BlastP analysis listed in Table 14: poly-gamma-glutamate from base 20186 to 24645, sugar transport from base 159934 to 172757, and teichuronic from base 886658 to 930066. Table 15 lists the

5 ORFs found within these regions.

TABLE 15: CAPSULE LOCI

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | Locus |
|------------|-------------------|-----------------------|----------------------|
| 38a | Seq. ID No. 45 | Seq. ID No.46 | Poly-gamma-glutamate |
| 38b | Seq. ID No. 47 | Seq. ID No. 48 | Poly-gamma-glutamate |
| 39b | Seq. ID No. 51 | Seq. ID No. 52 | Poly-gamma-glutamate |
| 40 | Seq. ID No. 53 | Seq. ID No. 54 | Poly-gamma-glutamate |
| 41a | Seq. ID No.55 | Seq. ID No.56 | Poly-gamma-glutamate |
| 41b | Seq. ID No.57 | Seq. ID No.58 | Poly-gamma-glutamate |
| 41c | Seq. ID No. 59 | Seq. ID No. 60 | Poly-gamma-glutamate |
| 329 | Seq. ID No. 683 | Seq. ID No. 684 | sugar transport |
| 330a | Seq. ID No.685 | Seq. ID No.686 | sugar transport |
| 330b | Seq. ID No.687 | Seq. ID No.688 | sugar transport |
| 330c | Seq. ID No. 689 | Seq. ID No. 690 | sugar transport |
| 331 | Seq. ID No.691 | Seq. ID No.670 | sugar transport |
| 332 | Seq. ID No.693 | Seq. ID No.694 | sugar transport |
| 333 | Seq. ID No.695 | Seq. ID No.696 | sugar transport |
| 334 | Seq. ID No.687 | Seq. ID No.698 | sugar transport |
| 335a | Seq. ID No.699 | Seq. ID No.670 | sugar transport |
| 335b | Seq. ID No. 701 | Seq. ID No. 702 | sugar transport |
| 337 | Seq. ID No. 703 | Seq. ID No. 704 | sugar transport |
| 338a | Seq. ID No.705 | Seq. ID No.706 | sugar transport |
| 338b | Seq. ID No.707 | Seq. ID No.708 | sugar transport |
| 338c | Seq. ID No. 709 | Seq. ID No. 710 | sugar transport |
| 341a | Seq. ID No.711 | Seq. ID No.712 | sugar transport |
| 341b | Seq. ID No. 713 | Seq. ID No. 714 | sugar transport |
| 342a | Seq. ID No.715 | Seq. ID No.716 | sugar transport |
| 342b | Seq. ID No.717 | Seq. ID No.718 | sugar transport |
| 342c | Seq. ID No.719 | Seq. ID No.720 | sugar transport |
| 342d | Seq. ID No.721 | Seq. ID No.722 | sugar transport |
| 342e | Seq. ID No.723 | Seq. ID No.724 | sugar transport |
| 342f | Seq. ID No.725 | Seq. ID No.726 | sugar transport |

TABLE 15: CAPSULE LOCI

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | Locus |
|------------|-------------------|-----------------------|-----------------|
| 342g | Seq. ID No.727 | Seq. ID No.728 | sugar transport |
| 342h | Seq. ID No. 729 | Seq. ID No. 730 | sugar transport |
| 344a | Seq. ID No.731 | Seq. ID No.732 | sugar transport |
| 344b | Seq. ID No. 733 | Seq. ID No. 734 | sugar transport |
| 345 | Seq. ID No. 735 | Seq. ID No. 736 | sugar transport |
| 346a | Seq. ID No. 737 | Seq. ID No. 738 | sugar transport |
| 346b | Seq. ID No.739 | Seq. ID No.740 | sugar transport |
| 347 | Seq. ID No. 741 | Seq. ID No. 742 | sugar transport |
| 349a | Seq. ID No.743 | Seq. ID No.744 | sugar transport |
| 349b | Seq. ID No.745 | Seq. ID No.746 | sugar transport |
| 349c | Seq. ID No. 747 | Seq. ID No. 748 | sugar transport |
| 350a | Seq. ID No.749 | Seq. ID No.750 | sugar transport |
| 350b | Seq. ID No. 751 | Seq. ID No. 752 | sugar transport |
| 351 | Seq. ID No. 753 | Seq. ID No. 754 | sugar transport |
| 1646a | Seq. ID No.3389 | Seq. ID No.3390 | Teichuronic |
| 1646b | Seq. ID No.3391 | Seq. ID No.3392 | Teichuronic |
| 1646c | Seq. ID No.3393 | Seq. ID No.3394 | Teichuronic |
| 1646d | Seq. ID No.3395 | Seq. ID No.3396 | Teichuronic |
| 1646e | Seq. ID No.3397 | Seq. ID No.3398 | Teichuronic |
| 1646f | Seq. ID No. 3399 | Seq. ID No. 3400 | Teichuronic |
| 1647 | Seq. ID No. 3401 | Seq. ID No. 3402 | Teichuronic |
| 1648b | Seq. ID No. 3403 | Seq. ID No. 3404 | Teichuronic |
| 1649a | Seq. ID No.3405 | Seq. ID No.3406 | Teichuronic |
| 1649b | Seq. ID No.3407 | Seq. ID No.3408 | Teichuronic |
| 1649c | Seq. ID No. 3409 | Seq. ID No. 3410 | Teichuronic |
| 1652a | Seq. ID No.3411 | Seq. ID No.3412 | Teichuronic |
| 1652b | Seq. ID No. 3413 | Seq. ID No. 3414 | Teichuronic |
| 1654 | Seq. ID No. 3415 | Seq. ID No. 3416 | Teichuronic |
| 1656b | Seq. ID No. 3417 | Seq. ID No. 3418 | Teichuronic |

TABLE 15: CAPSULE LOCI

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | Locus |
|-----------------------|--------------------------|------------------------------|--------------|
| 1657 | Seq. ID No.3419 | Seq. ID No.3420 | Teichuronic |
| 1659a | Seq. ID No.3421 | Seq. ID No.3422 | Teichuronic |
| 1659b | Seq. ID No.3423 | Seq. ID No.3424 | Teichuronic |
| 1659c | Seq. ID No. 3425 | Seq. ID No. 3426 | Teichuronic |
| 1660b | Seq. ID No. 3427 | Seq. ID No. 3428 | Teichuronic |
| 1662a | Seq. ID No.3429 | Seq. ID No.3430 | Teichuronic |
| 1662b | Seq. ID No. 3431 | Seq. ID No. 3432 | Teichuronic |
| 1663 | Seq. ID No.3433 | Seq. ID No.3434 | Teichuronic |
| 1664 | Seq. ID No. 3435 | Seq. ID No. 3436 | Teichuronic |
| 1665a | Seq. ID No. 3437 | Seq. ID No. 3438 | Teichuronic |
| 1668 | Seq. ID No. 3439 | Seq. ID No. 3440 | Teichuronic |
| 1669 | Seq. ID No.3441 | Seq. ID No.3442 | Teichuronic |
| 1670a | Seq. ID No.3443 | Seq. ID No.3444 | Teichuronic |
| 1670b | Seq. ID No.3445 | Seq. ID No.3446 | Teichuronic |
| 1670c | Seq. ID No. 3447 | Seq. ID No. 3448 | Teichuronic |
| 1673a | Seq. ID No.3449 | Seq. ID No.3450 | Teichuronic |
| 1673b | Seq. ID No.3451 | Seq. ID No.3452 | Teichuronic |
| 1673c | Seq. ID No.3453 | Seq. ID No.3454 | Teichuronic |
| 1673d | Seq. ID No.3455 | Seq. ID No.3456 | Teichuronic |
| 1673e | Seq. ID No.3457 | Seq. ID No.3458 | Teichuronic |
| 1673f | Seq. ID No. 3459 | Seq. ID No. 3460 | Teichuronic |
| 1674 | Seq. ID No. 3461 | Seq. ID No. 3462 | Teichuronic |
| 1675a | Seq. ID No.3463 | Seq. ID No.3464 | Teichuronic |
| 1675b | Seq. ID No.3465 | Seq. ID No.3466 | Teichuronic |
| 1675c | Seq. ID No. 3467 | Seq. ID No. 3468 | Teichuronic |
| 1676 | Seq. ID No. 3469 | Seq. ID No. 3470 | Teichuronic |
| 1677 | Seq. ID No. 3471 | Seq. ID No. 3472 | Teichuronic |
| 1679 | Seq. ID No. 3473 | Seq. ID No. 3474 | Teichuronic |
| 1680 | Seq. ID No. 3475 | Seq. ID No. 3476 | Teichuronic |

TABLE 15: CAPSULE LOCI

| ORF Number | DNA SEQ ID Number | Protein SEQ ID Number | Locus |
|-----------------------|--------------------------|------------------------------|--------------|
| 1682a | Seq. ID No.3477 | Seq. ID No.3478 | Teichuronic |
| 1682b | Seq. ID No. 3479 | Seq. ID No. 3480 | Teichuronic |
| 1683a | Seq. ID No.3481 | Seq. ID No.3482 | Teichuronic |
| 1683b | Seq. ID No. 3483 | Seq. ID No. 3484 | Teichuronic |
| 1684 | Seq. ID No. 3485 | Seq. ID No. 3486 | Teichuronic |
| 1685 | Seq. ID No. 3487 | Seq. ID No. 3488 | Teichuronic |
| 1687 | Seq. ID No.3489 | Seq. ID No. 3490 | Teichuronic |
| 1688a | Seq. ID No.3491 | Seq. ID No.3492 | Teichuronic |
| 1688b | Seq. ID No.3493 | Seq. ID No.3494 | Teichuronic |
| 1688c | Seq. ID No. 3495 | Seq. ID No. 3496 | Teichuronic |
| 1689a | Seq. ID No.3497 | Seq. ID No.3498 | Teichuronic |
| 1689b | Seq. ID No.3499 | Seq. ID No.3500 | Teichuronic |
| 1689c | Seq. ID No. 3501 | Seq. ID No. 3502 | Teichuronic |
| 1690a | Seq. ID No.3503 | Seq. ID No.3504 | Teichuronic |
| 1690b | Seq. ID No. 3505 | Seq. ID No. 3506 | Teichuronic |
| 1691 | Seq. ID No. 3507 | Seq. ID No. 3508 | Teichuronic |
| 1692 | Seq. ID No. 3509 | Seq. ID No. 3510 | Teichuronic |
| 1693 | Seq. ID No. 3511 | Seq. ID No. 3512 | Teichuronic |
| 1694a | Seq. ID No.3513 | Seq. ID No.3514 | Teichuronic |
| 1694b | Seq. ID No.3515 | Seq. ID No.3516 | Teichuronic |
| 1694c | Seq. ID No.3517 | Seq. ID No.3518 | Teichuronic |
| 1694d | Seq. ID No. 3519 | Seq. ID No. 3520 | Teichuronic |
| 1696 | Seq. ID No. 3521 | Seq. ID No. 3522 | Teichuronic |
| 1697a | Seq. ID No.3523 | Seq. ID No.3524 | Teichuronic |
| 1697b | Seq. ID No. 3525 | Seq. ID No. 3526 | Teichuronic |
| 1699a | Seq. ID No.3527 | Seq. ID No.3528 | Teichuronic |
| 1699b | Seq. ID No. 3529 | Seq. ID No. 3530 | Teichuronic |
| 1700a | Seq. ID No.3531 | Seq. ID No.3532 | Teichuronic |
| 1700b | Seq. ID No. 3533 | Seq. ID No. 3534 | Teichuronic |